

Andrew Taylor



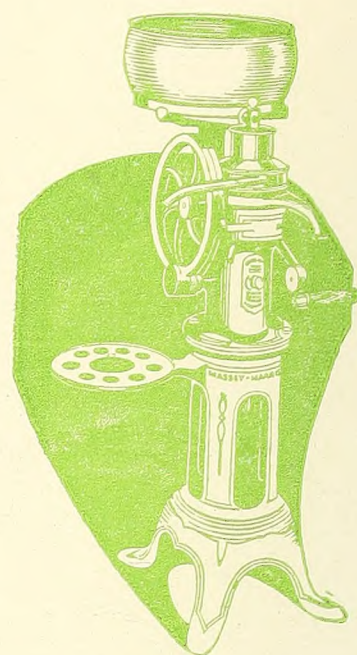
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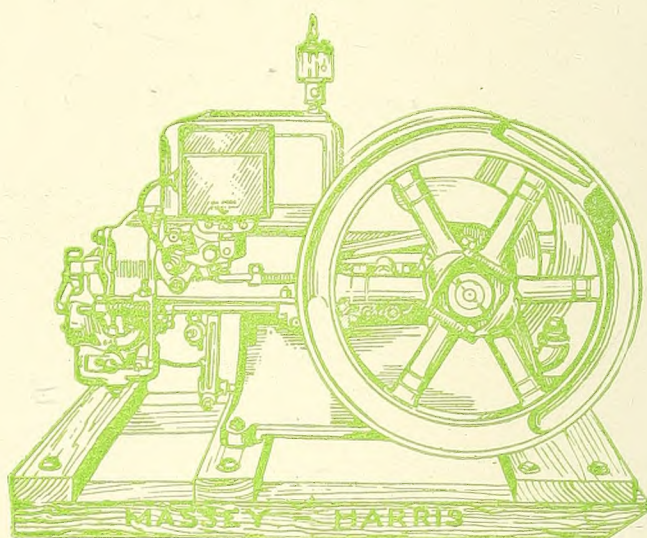
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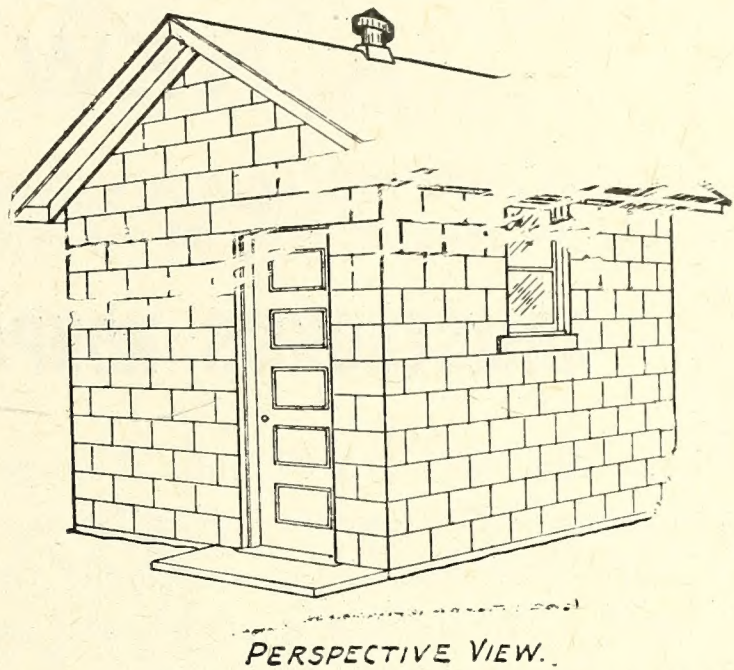
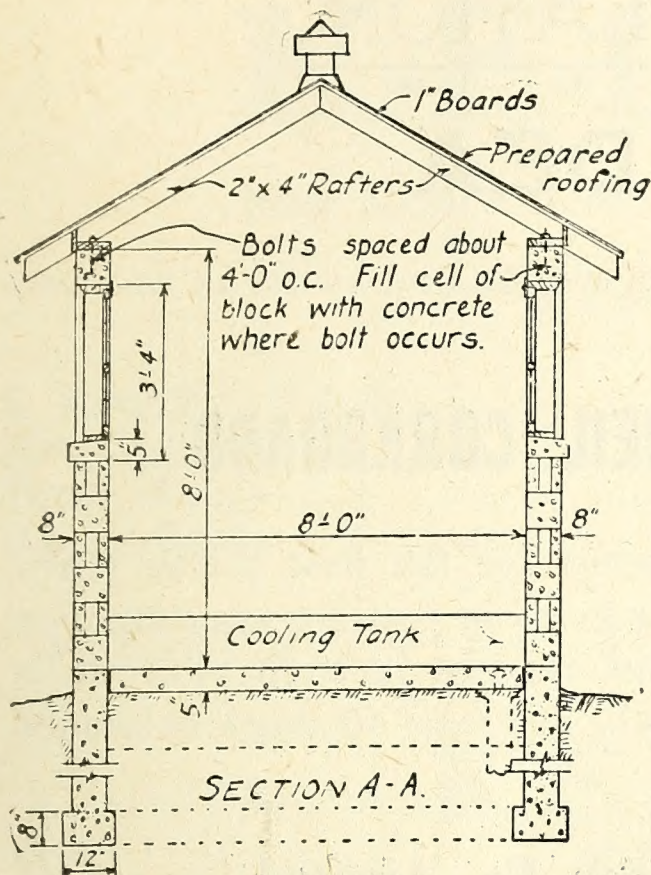
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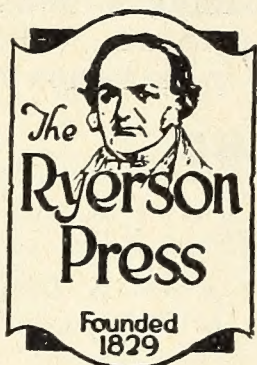
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CONTENTS

VOL. XXXIX. GUELPH, DECEMBER, 1926. No. 4

The Letter—A Christmas Tale	159
<i>By Cecil Cox, '27</i>	
Are the Present Horticultural Courses Designed to Meet the Present Day Requirements.....	164
<i>By M. B. Davis</i>	
Unwritten History	168
<i>By ————</i>	
Greenkeeping	173
<i>By C. A. Tregillus</i>	
The Relationship of Method to Result in Forage Crop Experiments	178
<i>By G. P. McRostie, Ph.D.</i>	
The Irish Potato	182
<i>By Paul A. Murphy</i>	
Advances in Animal Nutrition During Past Quarter Century	185
<i>By T. B. Morrison</i>	
Agricultural Conditions in Montana.....	195
<i>By F. R. Linfield</i>	
Are College Men Wanted.....	197
<i>By A. W. Armstrong</i>	
Making a Record	201
<i>By D. F. Putnam, '27</i>	
News and Views	202
Editorial	203
College Life	207
Athletics	210
Macdonald	213
Alumni	219
Locals	vii

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A
Righte Merrie
Christmasse



THE O.A.C. REVIEW

"THE PROFESSION WHICH I HAVE EMBRACED REQUIRES A KNOWLEDGE OF EVERYTHING"

VOL. XXXIX.

GUELPH, ONT., DECEMBER, 1926

4

The Letter A Christmas Tale

By Cecil Cox

I KNEW what was on Mary's mind when she turned to me and said, "There goes McCormack and his new home boy over the Iron Bridge."

Mary, like most good farmer's wives, has a habit of watching the highway during her scant intervals of leisure from her life work of housekeeping. I crossed the kitchen to her side.

"You'll sight them again in a moment beyond the spruce row," said Mary.

McCormack's lean nags and teetering democrat wagon ambled into view beyond the dark evergreens. My hard bitten neighbour, contrary to his usual custom, was not alone on the wagon seat. A towse-headed fair wisp of a lad, not more than twelve years old I'll swear, and scantily clad in out-grown garments of meagre cut, crouched hands in pockets alongside the dour, black, fur clad bulk of the man McCormack.

"The child looks almost frozen," said Mary.

In silence we watched them out of sight down the country road.

"I wonder at the authorities allowing him another Home boy after that last child died in his house." Mary's voice shook with deep, deep indignation. "I cannot see what they're about!"

"McCormack has a smooth tongue," I said.

More than ten, no it is almost twelve years have gone by since Mary, after some slight formalities with the law and the local minister, first came to live and share the passing days with me at the "Old House." If I seldom speak of Mary as my wife it is because my mind still lacks ample time to become accustomed to the wonder of it. To me Mary is still the same fair, serene goddess whom I sought out and courted but yesterday with many a secret qualm at my own temerity. That we two, unmolested, may inhabit and share, in a world in which there is much of need and unhappiness, the broad competence of the "Old House Farm" is to me—even although I be its rightful owner by right of several generations—a matter of continual amazement. Ever when I ponder on our good fortune—I have much time for quiet meditation following my work alone in the quiet fields—there comes over me that vague unease, that creeping apprehension which nature sends to dilute too perfect happiness. Then I remember how quietly the days are slipping by—for just we two.

Next to Mary, or with Mary—they are together in my mind always as they are together now always in reality—

the "Old House" itself means most to me. My great grandfather, the story goes, marked its site and quarried the first stone for its erection before he died. In time, it was not a matter for haste, this building for the ages, his son, my grandparent, raised the huge squared blocks of limestone into their place. They have not settled or shifted a hair's breadth in a hundred years. The thick coats of plaster then spread over the solid strength of its buttressed walls are yellow now with age, as yellow as the cream which rises in the pans in the dairy room, but as smoothly unbroken and as solid appearing to the eye as that same cream itself. Its hardwood floors, well laid on oak struts, "eight by eight," are as sound as the day the heavy lumber was hauled out of the home bush and, except in the kitchen where there is a worn track or two, only the rich colouring of age mark the years of their usefulness. In the upper hallways and little used bedrooms of the wide interior of the "Old Home," the flooring shows scarce a mark. In my turn I have added to the "Old House" a few modern trinkets such as water pipes and electric wires. They rest on the old structure like jewels on a queen, a woman who is neither the more nor the less of a queen for the wearing of them.

But it is in the cellar, the huge basement, that one realizes the size of the "Old House." This floor is divided into three rooms which underlie the whole structure; three spacious, white-washed, stone walled rooms, huge enough for a drill shed, and as empty, and the whole silent house bearing down upon them from overhead. Mary orders the cellar as tidily as the rest of our dwelling. Three cords of firewood neatly piled appears even smaller in that underground space than when

it lay drying out of doors. The small shelf of preserves, clean wiped glass jars of crimson and amber and ebony-red syrup (two people require so little), the barrel or two of apples and roots, all look to me to be even too tidily kept, somehow. Sometimes I think that the undisturbed tidiness that pervades the "Old House" is slowly breaking Mary's heart.

Once Mary broached the subject of an adopted child.

"Too risky," I said. The old farm to me has always meant more than just a place to live. I see it always as the growing effort of generations of patient men, of patient, careful men. I shudder at the thought of reckless blood.

Building the fireplace was a mistake. I see it now, although at the time I did it all for the best. Stone walls are good walls when raised to protect man from the whirlwinds that rage without but all the stone in the world will not make one little poultice to assuage the slightest chill within his own breast. I trust I was patient at the task, as patient as ever parent or grandparent of mine had been before me. I tried to be. Hannah, the local mason, and I wrought at it together. We used nothing but the brightest hued granite boulders from far Ungava for our building stones. The transporting of the material to our warm Ontario valley had been attended to by the great glacier in ample time for our purpose; in fact, I understand the "nigger heads" lay in my pasture fields for some years before I needed them. All this Hannah told me jestingly as we piled the great boulders up and raised a roaring fire of pine stumps about them. 'Twas afterwards that we dashed cold well water over the sizzling mass of them,

and split them in clean halves with sledge and crowbars as easily as a man rives a sound apple in his two strong hands. 'Twas then that the glittering unweathered hearts of the great stones lay open to sight of man for the first time since the world began.

I had expected great things from that fireplace. Possibly I thought that it's living cheer would somehow add a little of its own warmth and comfort to the routine of our days. It was a chill day, the day we laid the last stone in place, and carried the tile flue through an almost solid partition of oak to the main chimney pile. I would not heed Mary's warning to regard Hannah's advice and not build a fire in its huge mow until the mortar had properly dried. No sooner had Hannah collected his tools and gone, no sooner had Mary gathered up the last dab of mortar from the living room floor and swept out tracked muck after us, than I had the kindling popping and crackling on the stones and a ready pile of beech logs standing by.

That evening Mary and I sat long before the new, old-fashioned wonder of it. We turned the electric lights out—one does not care to listen to a brass band when a great church organ is playing—and watched the play of living light and shadow dancing over the floor of the old room. After a bit Mary sat with her chin on her cupped hands, very quiet and thoughtful.

"A penny for your thoughts, Mary," I said.

Not a trace of petulance, not the least shadow of unhappiness crept into her face or marked the serenity of that calm brow as she answered me.

"The old house seems more empty than ever now," said Mary.

It was growing late on Christmas eve when Mary made an alarming discovery.

"Jim," said she, "I know it is getting late and you are tired and all, but Christmas dinner will not be Christmas dinner for me unless——"

"Now what," I asked anxiously, "is worrying the best little woman in the world?"

"Jim, I have forgotten all about the cranberries!" said my rueful Mary.

I laughed as I shouldered into my fur coat. "So small a thing to do for such a girl! Stay right here! I can make the village and back in six minutes flat, dark night and all. The 'Lady of the Old House' must have her cranberries!"

I was off. Within three minutes I had stopped my battered old runabout among the flivvers and democrats before the village store and had my gloved hand on the door latch, within three minutes, not a second more. I heard the babble of heavy voices as I pushed open the door, and felt the heavy tobacco laden air of the crowded store meet my face in a warm mist as I left the clean outdoor cold of the night behind me and stepped within. The room went still. How can the gossiping country store idlers be sure but what each new arrival on the scene is the subject of their wandering discourse. I bought my cranberries under the eyes of a silent, scrutinizing audience. Then, my purchase made, I did, for me, a strange thing. I forgot Mary for the time, Mary waiting alone in the large silences of the Old House, and stayed.

"What's the question," I asked, "before the House of Lords?"

Someone laughed. "McCormack there has been telling us of the goings on of that new Home boy of his. Yes, sir! Some of the things he has been doing are quite a caution."

"Oh, hello, Mac!" I said, "is that you? Tell us all about it. I'll bet the young imp is a sore trial and affliction to you. What say?"

"That he is," said big, dour, stubble jawed McCormack. "Never a morning yet but I've had to call him, and us not getting up till five o'clock on winter mornings. He's poor stuff, not worth his salt, though he gets pork and potaties three times a day just like his betters. He's soft, too. Got his hands all chapped pumping water at the outside trough. Never brung any mitts with him to this country, the young fool. Says he can't milk, his hands are so sore. Won't learn, I tell him. I'd send him back to the Home only I might get a worse one. The labour problem is hard on us farmers. Always was." McCormack spat into the stove.

"Tell him how the kid greased the wagon, Mac!" said someone. The crowd laughed at the suggestion.

"Oh, yes," said McCormack, "I give him a can of axle grease and a wagon wrench and told him to grease the stock rack, never thinking. Half an hour later he was back at me for more grease. I went and took a look at the wagon. No wonder he wanted more grease. He was greasing it all over, starting on the seat first. I clouted him for it though, and docked him the price of the grease."

McCormack's audience gave vent to their mirth in loud guffaws. It was a poor tale, but a tale well within the scope of their limited mentalities.

"Can the boy do half a man's work for you, Mac?" I asked.

"He can not," said Mac.

"Does he get half a man's pay, Mac?"

McCormack made no answer to that sally.

"Tell us about the letter again, Mac?" asked someone.

"Oh, yes!" replied McCormack, "that's a right good one. Other night I saw a light in the kid's room when I went upstairs. 'Twas time he was abed, so I stepped into his room to tell him so. By gobs, if he hadn't fallen asleep by the dresser, writing a letter by himself. I got a copy of it here; it's quite a document."

"But tell us about the father business," said one...

"Oh, aye, I'm forgettin' that was the best part of it. I shook the kid by the shoulder, he's no more trouble to shake than a dead hen, a poor man for his age like most of those immigrant kids. He wakes up sudden, and says "Father! Is that you, father?" "No," I said, "I'm not your father. Your father's six thousand miles away, and dead besides. And what's more," I says, "if he had done right for his own you wouldn't be here. Get into bed! If you're not up by five o'clock I'll whale you for a change. Maybe that'll help some."

"Did he try to lip you, Mac?" asked a neighbour.

"Not he! He just sort of wilted like and crawled into bed without a word."

"Read us the letter, Mac!"

"Oh, yes! Here it is! Listen!" McCormack drew a crumpled paper from his pocket, and leaned over before the smoky kerosene lamp the better to see his own copied scrawl.

"Dear Sister,—

Please do not worry about me. I am quite well and staying with good people. I hope you like your place as

governess with the Dudeleys. I am quite happy here. Please do not bother to send out the clothes you mentioned. You will need the money for yourself. I am all right here. I think it will be a long time before I can come home with a fortune like we planned. Canada is a lot different from what we thought. Mr. McCormack has promised to pay me \$60 for the first year, but that will not be until next fall. But do not worry about me. I hope your cough is better. Do not worry about me. I am all right.

With love from

Tib."

McCormack finished reading and looked to his audience like an actor taking an encore. But as a comedy (let it be said for the honour of Ontario) his act fell flat. A few louts, of course, had to laugh. The rest kept decently still or shifted uneasily on their feet in discomfited silence. As for me, I could not have stayed longer in the same room with McCormack and kept the peace. I shouldered my way out of the warm, fetid room into the clean, cold December night.

The partly obscured light from the store windows fell on the fuzzy un-groomed coats of McCormack's nags. Beyond them I made out the outlines of a dilapidated democrat, and a small huddled form upon the seat. I strolled over and rested a boot on the hub of the nigh front wheel.

"Hello there, sonny," I called.

No answer from the humped figure above me; shy, I guessed.

"Are you not cold waiting here?" I asked. "Why do you not wait inside?"

The youngster shifted on his seat and answered me in a clear treble voice—good heavens, what a child he was—"McCormack told me to wait

out here and mind the horses."

As the lad bent over on the wagon seat I caught a glimpse of his face in the path of the lamp light as it fell athwart of the crazy vehicle. Yes, he was fair, golden haired; I liked that.

"Do you like it here, in these parts, sonny?"

"No, sir—Oh! I mean—well everything is so different from home, sir!" He dropped the last words lamely. Poor little devil!

I was thinking. Old House—the stones of the Old House—the silence of the Old House—Mary and I twenty years on—reckless blood—no—that letter—"do not worry about me"—yes, he had written that—true as steel—true as steel while the devil was weeping to see McCormack, that man McCormack, hounding him—"Tib"—what a name for a boy—and golden haired. I looked from my old motor car to McCormack's older nags. What if the man was, in a sense, the boy's legal guardian; I could straighten that out later—in the meantime—well, what if it was a bit high handed, somewhat smacking of larceny even, of what benefit was it to a man to be law abiding all his life if he could not commit one decent crime and get off on his good reputation?

"Are you cold, sonny?" I asked suddenly.

"Yes—no, sir! N-n-not v-v-very."

My mind was made up entirely, just as suddenly.

"Quick, Tib," I whispered, "jump into this car with me!"

Stone walls may not lend themselves to the making of poultices, but they serve well to protect happy hearts from the elements that rage without when all is well within. And Mary's cooking! That Christmas dinner! It al-

most justified, I told her, that seven hundred dollars I had given her for kitchen equipment. "My work," she said, "is just as important as yours." And Mary is always right.

Anyway Tib and I voted the feast a huge success, and between us we washed up the dishes afterwards to show our appreciation of Mary's efforts.

"What part of the dinner did you

like the best, Tib?" I asked.

Tib had one of Mary's aprons tied high under his chin while we puttered around the kitchen sink. I watched a dimple form in the fair little thoughtful face above the blue gingham, a thoughtful dimple. He drew his dish cloth slowly down a silver knife blade, thoughtfully.

"The cranberry sauce," said Tib.

No wonder Mary laughed.



"Are the Present Horticultural Courses Designed to Meet the Present Day Requirements?"

By M. B. Davis

HORTICULTURE in Canada, from the Atlantic to the Pacific, is officially classified as but a part of agriculture, and in many of our institutions of learning it is subservient to a large degree to what are considered the mainstays of Canadian Agriculture. It is not difficult to appreciate the condition which has brought this about nor impossible to understand the reasoning which perpetuates such a condition. Horticulture, when considered only in terms of the farm orchard and vegetable garden, meets animal husbandry and general agriculture side by side, and it is difficult indeed to divorce the two in any course of general instruction. But upon closer analysis horticulture is something more than this, it reaches out and touches a larger part of the community than the farmer; it forms a part of the life of every householder in the country in some phase or other,

and this in addition to its being a highly specialized business for the fruit grower, vegetable gardener, nurseryman, and florist. Think of it! Horticulture embraces: Fruit growers, who are not general farmers, vegetable gardeners, who grow nothing else, nurserymen, who deal only with Horticultural plants, amateur gardeners in all our cities, who in many instances are largely interested in the growing of horticultural plants for their beauty, farmer fruit growers, who have orchards as an adjunct to their general farm, and all classes of farmers who should grow fruit, vegetables and ornamental plants for the same reason that the suburban and city dweller grows them.

From among this array it is easily seen that the bulk of horticulturists are not agriculturists in the true sense of the term; and it is also equally evident that practically all agriculturists are horticulturists in some degree. Hav-

ing analyzed this phase so that we appreciate the widespread nature of horticulture we should now be in a position to consider the value of our present day instruction and organization as a means to promote the best interests of the horticultural world.

I presume that a large majority of the students who will graduate in horticulture from our Canadian Agricultural Colleges will consider, upon graduation, that they are really horticultural specialists, and I further imagine that the authorities who frame up the courses of instruction earnestly believe they are turning out men who are as well versed in their profession as any Bachelor from another option.

As one who took such a course of instruction, and who since has had occasion to supervise the work of new graduates, I feel that I am justified in saying that the average horticultural graduate knows less about his chosen path than any other class of graduates from the agricultural college.

That this is true is not the fault of the student but rather of the course. Just why a man who is taking up plant life as a study should be required to become even a mediocre judge of beef cattle, dairy cattle, swine, sheep and poultry and an embryonic veterinarian and cattle feeder, is difficult to understand. Yet the time required of the undergraduate for these subjects is astounding from the viewpoint of a horticulturist.

All plant men meet on more or less common ground, as for instance in the study of chemistry, both organic and inorganic, including, of course, biochemistry and plant nutrition, elementary entomology, plant pathology, genetics, and its allied subjects, in general botany with all its ramifications, soil physics, and bacteriology, etc.

Plant and animal men meet in elementary chemistry, very slightly in entomology, very seldom, if ever in plant pathology, on common ground in genetics, and bacteriology for a time at least, and but seldom in botany. It is readily noticeable that there is a pretty sharp division between the two; and a pretty divergent course after the elementary stages, and from the viewpoint of the horticulturist, a wider divergence than is here exhibited. Would it not seem almost imperative, therefore, for the man who intends following horticulture as a profession or vocation, that a course concentrating at least on plant subjects from the very beginning be introduced? Granting that for the general agricultural course, or for the boy who intends to return to the farm, a general smattering (for that is all it now amounts to) of agricultural and horticultural knowledge is desired, surely it is evident that the horticultural world requires something more, something more closely related to itself, something deeper and more highly specialized! Not all the blame can be taken from our own horticultural instructors who insist in the last two years on giving lectures on the growing of lettuce, onions, and individual fruit crops in somewhat the same form as it is given in the second year, instead of concentrating on the fundamental and basic sciences, together with examples of application.

What is Horticulture?

Upon a clear understanding of just what horticulture is, rests the conception of the organization of our educational and research work.

The art of horticulture has been practised in varying degrees since the dawn of civilization, long before the advent of science as we now know it. But with the progress of generations

it has come to be realized that horticulture is really the application of certain sciences such as: chemistry, as related to soil activities and plant growth, genetics, as expressed in heredity and plant improvement, entomology and plant pathology, as a means of pest and disease control, botany, as expressed in classification, plant relations and structures, etc.

Being all this then, a first class Professional Horticulturist should have a very comprehensive working knowledge and understanding of all these sciences; without that he is anything but a Professional Horticulturist.

Present Organization at Fault

If the horticulturist of necessity is required to possess the above knowledge he should, above all others, be in a position to initiate, direct and correlate the necessary research work for Horticulture; but we find in Canada to-day that he is in many instances denied that prerogative, by the very nature of the system. Authority has placed the entomologist, the pathologist, the chemist and all the other "ists," in water-tight compartments, each an authority unto himself, and each only interested in his own narrow field of endeavor. While this specialization has resulted in great strides in disease and insect control, many of the fundamental problems in heredity and plant nutrition remain untouched. While undoubtedly many of our horticultural workers appreciate this situation and could give volumes of problems to be attacked that are of practical importance, the opportunity is not theirs, the equipment and men are not at their disposal; they are limited in their field of endeavor to purely empiric methods, in many cases of the crudest kind.

Thus far we have dealt mainly with

the research side. Now what of the practical?

It must be admitted that the needs of horticulture will not be entirely met by the professional man who is mainly interested in research or experimental effort, and that there is a still larger field for the highly trained practical man who concentrates on the application of the latest findings.

If our institutions were catering to this end one might find consolation in a course of training which aimed at the production of first class practical men in the art of horticulture, specializing them into groups of fruit, vegetable and ornamentalists. But even this is not to be found in Canada, or indeed in America. Highly trained practical gardeners, having a knowledge of methods and varieties, are not being trained in this country at all. When this is coupled with our lack of research and properly directed scientific training it would seem high time for a concerted effort on the part of the Canadian horticulturists to bring about a reorganization in the right direction.

To those of you who have contemplated horticulture as a profession let me address a few remarks:

In the foregoing paragraphs I have endeavored to place before you some of the shortcomings of our present system, not with a view to discouragement or with a wish to destroy, but with the idea of setting you thinking along lines of improved methods, of greater opportunities, and increased effort and efficiency in your chosen field.

To be successful in your calling you who seek to be horticulturists should first of all have a clear conception of what your profession embraces; its status in the welfare of man; its present stage of advancement as com-

pared with other professions; its ultimate possibilities of improvement; your own relation to it, and your abilities in that direction; and the demands which the profession will make upon you, and your willingness to equip yourself for better service.

Horticulture is not only the mere growing of fruits, vegetables and flowers, it is a far broader thing, it is the co-ordination and practical application of the fundamental sciences of soil activities and plant growth, and the successful horticulturist of to-morrow must have not only a knowledge of his species and his varieties, but a clear and working conception of the sciences of soils, plant nutrition, pathological conditions, the laws of heredity and cytological phenomena, etc., as related to plant growth, and he must further be able to marshal the facts and principles of these sciences in such a manner that he obtains in their prac-

tical application the greatest possible commercial efficiency.

In closing let me urge upon you men of horticulture to redouble your efforts in acquiring a good grounding in the sciences. We still have a need for more well trained horticultural specialists. The pure scientist necessarily narrow in his vision and training is better equipped for deeper research in a narrow field than you, but without your knowledge of practice, of species, of varieties, your general knowledge and familiarity of all the applied sciences of your profession the results of his investigations are of little value.

You are the co-ordinators, the men who must work out the practical application either in co-operation with the pure scientist or by yourselves.

Yours is a great profession. It embraces much that is beautiful in nature, and fulfils an indispensable part in the welfare of the universe.



"RE CONVERSAT"

Year' 28 are making extensive preparations for this year's Conversat, which is to be held on Friday night, January 28.

Burton Tilbs' eleven piece broadcasting orchestra, from Toronto, are supplying the music. A cordial invitation is extended to all ex-students. Invitations may be obtained upon application to W. A. Davidson, O. A. C.

Unwritten History

Dear Mr. Editor,—Enclosed is a dollar to renew my subscription, which I will be glad if you will pass along to the proper authority.

Not long since I was reading in Saturday Night the musings of an old boy over the closing of the Woodstock College. That may have set me to thinking. Possibly also a reading of the very nifty pages of the Review induced a comparison with those days, thirty years ago, when your dutiful subscriber was a member of the staff. I well recall that what proved to be a real "hit" was a series of unwritten histories from older graduates, led off I think, by ex-President Creelman. I think part of them, as written by him, were re-printed last year. At any rate, I fell to thinking how much of the stuff that lives longest in memory never sees print, and on a later Sunday morning I sat down to the Corona and wrote what is here enclosed, later putting it aside as a very incomplete thing, not worth bothering with.

A few days since I happened to show it to _____, now stationed at _____, and he was disposed to insist that it be sent in. So here it is. Do what you like with it, subject to the need that it and those following it, if any, should be printed as anonymous. I think they would be much better that way. And, having four girls getting ready for Macdonald, I am not anxious to set before them in print any record which might later rebound on myself!

Why I say that this is unsatisfactory is that it fails to include such episodes as those concerning the night when a certain sheep was duly hanged from the tower flagstaff by a delegation headed by one who is now president

of Ontario's largest creamery combination and able to draw a six figure cheque; nor the other time when after Hallowe'en a certain piece of bedroom equipment dangled in the breeze of Sunday from the same flag-staff (and yet I am not sure that it was not inverted on top of it, in fact, I am quite certain that it was), and John Squirrell and Dr. Mills had the time of their later lives trying to get it down. There is also the long line of stories associated with "shop" and the late James McIntosh, and the cider mill he made only to find that his own orchard was duly "cleaned" and the resultant product cached in the greenhouse basement, later to be found to have a kick which brought disaster to one who is now one of Cobalt's leaders. But, someone else can tell these.

Yours very truly,

Now that the O.A.C. has been empowered to hold its own convocations and have degrees conferred on its own campus, the old-timer is minded to agree that the world moves. It seems a far cry to the day, say June 10, 1898, when one of the B.S.A.'s was so unfortunate as to be wearing a pair of the then new tan shoes of a very pronounced shade. As he knelt before the late Principal Loudon, these shoes showed from below his gown and the galleries were a roar of imitations of the voice of a hungry calf. It may have been funny but it was very trying on the candidate. Of course, it was part of the game, played all the harder because the occasion followed a long period of examinations on papers set by persons one had never seen and written under nom-de-plumes which sealed the secre-

cy of the occasion. A veil may well be drawn over the ensuing days until the reports came out as each man wondered how he would face at home the parents whose labor had provided the wherewithal for three years at Guelph, eked out by farm labor, in case he failed, and how, moreover, he could hope to regain respectability in a critical neighborhood not so favored with higher education. Yes, it was some strain, and it is small wonder that the resultant conferring of degrees was a joyous occasion, even if the borrowed gowns were a menace to every movement. And, when, following the ceremony itself, the class foregathered with the photographer, still in the borrowed gowns, and the camera proceeded to create a record for handing down to posterity, it was a great day. Very likely most of the favored or successful have never worn a gown since, and never will. It was "one of Flame's little days," surely enough. And now the spectacular lighter side may be taken as a memory. The world moves.

A recent Review article—two articles facing each other, in fact—recalls also that the student view-point does not change. One of the said articles had to do with decorum, past and present, and the other the student impression of his teachers. Both have always been live topics and as the actual experiences fade into the years each old-timer becomes the more convinced that, whether all the brains of all the classes reached par in his year, the devilment surely did.

The class entering in October, 1895 may or may not have been covered with scholastic glories. It was, in numbers, one of the smaller years, coming between two "boom" periods in attendance. But they were huskies. What they lacked in numbers they made up

in avoirdupois. And they were not disposed to be patronized. One remembers well the day when the old botanical laboratory, shared by Professors Panton and Hutt, was reached by a stair with a square turn on the landing. The second year were detained by Prof. Panton, long since gathered to his fathers. Undoubtedly the first year should have waited, possibly they would, had they known of the delay. But the two crowds met on the stairs and a scrap ensued. That someone wasn't killed remains a mystery to this day. The face of Prof. Panton was a study in frozen horror but, through it all, there was no bad feeling—just a disinclination to be patronized. Later on the same class would playfully surround the dignified third year and insist on them accompanying them to their lecture, or, at least, to the door. One day the said third year, while changing classes, caught two or three first year men behind the main body and proceeded to retaliate. At that time the central heating system was being installed and a wide and deep clay ditch ran along from the main building behind the chemical laboratory and the gymnasium. When the reinforcements got into action, that section of the grounds suggested high angle fire with lyddite, accompanied by bayonet practice at close quarters.

The interesting thing was the reactions of the new men each year at farm labor. At home they would have worked with a will beyond a doubt. At Guelph they started to do the same. But, as the days passed, the waste of energy thus indicated reduced itself to a systematic effort at seeing how little could be "got by" with. Frank Benson, farm foreman, understood boys pretty well, much better than his brief-time successor, one Muirhead, who

came to grief while trying to direct a large body of students picking up potatoes about where the new dairy building now stands to-day. A well-placed potato just back of the ear decided him in favor of a less strenuous place. McGillivray, dairy cattle foreman, was a gentle and devout soul and what was put over on him constituted no more nor less than a high crime. Jim Boyle, the dairy operating handy-man, whose piece-de-resistance was a cess pool which had to be pumped out by hand into a tank wagon and then hauled out on the adjacent meadows. Jim was a real guy and could "soldier" with the best of us. And then there were James, greenhouse foreman, he of the cockney accent, and William Squirrell, garden-in-chief, and as fine a spirit as ever breathed. For these men to live amongst the boys and keep the faith with Dr. Mills constituted daily problems in diplomacy. One hopes those of them who have not yet passed from us are able to see the humorous side of things at this distance.

It is readily sensed that residence problems nowadays present fewer problems and not the least influence in that direction would be that President Reynolds was then Resident Master, rooming at the hall end of "Lower Hunt." Few men can go back to the mornings when all foregathered in old Number One class-room for roll call and prayers without having then been able to see in this calm young man the logical some-day president. When he read there was a respectful silence not always in evidence. When he attended on Sunday mornings to listen to excuses for evading church attendance it required a hardened sinner to stall successfully. All this is not to infer that anyone doubted the good faith of Dr. Mills, but the doctor had the grey

hair and massive frame to properly inspire respect for his decisions, which by the way, were always accompanied by the feeling that he was trusting you. This rule may have long since been discarded, but it is to be doubted that it was not salutary even if there were occasions when a refusal to excuse was followed by a successful hiding out from John Squirrell and a lie the next morning at roll call which brought no real comfort to the liar. Discipline is discipline.

The average age at admission must have been reduced. The personnel of to-day's classes looks young, very young. Perhaps they would resent being told this, but thirty years from now it will sound differently. Besides, one gathers that fact from the small part now played in larger college affairs by outside politics creeping into the student body. Thirty years ago a general election was a period of not-too-well-suppressed excitement. One well remembers the visit of Mr. Laurier, later to be Sir Wilfrid, and "le vieux Cocq," then plain leader of the Ottawa Opposition. The candidates were the late James Innes and the late Christian Kloefer. When Laurier came he spoke at night in Victoria Rink, going first to an hotel near the Bell Organ plant, the name of which has gone from your servant entirely. The college boys paraded to the rink, sat together, and led the cheering. Later the horses were removed from the barouche, (wonder if money could hire a barouche in Guelph to-day?) a rope attached, and the leader drawn back to his hotel, the ride past the curbing of the fountain at the junction of Wyndham and Quebec streets, probably constituting one of his closest calls in a long career. He then shook hands with all and the boys returned to the hill,

THE O. A. C. REVIEW

very happy. A few days later Sir Charles Tupper was billed to speak at an afternoon meeting in the same rink, and it was at once suggested that the Laurier reception be duplicated—no one would contend to-day that any other thought entered into the matter than that of being present at an interesting function in proper form. But, whether official or not, and that is to be doubted, word presently came from the city that the boys were not to come. After the first shock of surprise negotiations were opened, explanations made and an invitation came. Here was where the evil genius of bad leadership came in. The march was made to the rink, and the same seats taken. Later the official procession went through the streets, being partially made up of mounted riders, whose horses bore yellow plumes in the head-stalls. The meeting started. Everyone cheered as before and when Sir Charles sat down after an effort wonderful for a man of his years, he was cheered again. And, then, there was hoisted in the boys' front the same banner they had carried before: "Laurier, Mowat and Victory," and a cheer for it began. But it was never finished. Rushed from the rear there began a hand to hand fight which no one having witnessed or taken part in will ever forget. The noise was terrific. Ladies fainted everywhere. The side doors of that rink opened as if by magic and the two fighting bodies flowed out into the alley, where, with the help of the police and the moral effect of a few black eyes and broken heads, they were separated. The boys formed up and started to march home. The mounted riders formed up and charged the lines. And then there was a scrap which made the rink fight seem puerile. Horses and men were down and clubs

swung everywhere, but the ranks held and the boys returned to the college amidst wild excitement. In a day or two the bruises began to ease, summer examinations came on, the election came along, and the episode blew over. But it ended a period of extremely sensitive conditions and it may greatly be hoped that a similar event could not transpire to-day—bad judgment on both sides. The trained man always wins and Captain Clarke's drilling stood by the students that day. Exact truthfulness, however, requires it to be added that for the few days remaining of the term no student remained down town after dark unless others were along.

On an earlier occasion an episode savoring of the ridiculous comes to mind. Hockey, as to matches, was then always played in Victoria Rink. If the college won the boys marched home on the sidewalk. If they lost they took the middle of the road. One Saturday night, after a victory, their progress along the sidewalk was challenged by Chief of Police Randall, and two of his men, who suddenly bobbed up from seemingly nowhere. All the boys had fish horns and the noise was considerable if not harmonious. At his order to leave the side-walk one Sissons blew a horn in his face and his men were crowded aside. The march resumed, but there was another scrap when a couple of boys were "arrested." For days afterwards the slogan was: "No arrests were made!" Discipline, whether wisely employed or not, had won the day again.

The repetition of this word "discipline" calls to mind the 16th Battery, old "A" Battery, with its old nine pound muzzle loading guns, raised at the college, and a body always worthy of the traditions later amplified by

their successors in France and now imperishably recorded in the Memorial Hall. At that time amongst the sub-alterns was John McCrae, later to become the author of "In Flanders Fields," and his brother Tom, two as fine officers and gentlemen as ever were. In John, who could maintain discipline without the least show of authority beyond a personal bearing which once encountered could never be forgotten, the boy was always uppermost. It is needless to say that after a winter of gymnasium drill and a spring season of standing gun drill, this battery always went into camp ready trained, and the shoulders of Capt. Clarke always set back an extra inch as the boys entrained for London, or Niagara, there to work off their accumulated energy under the boiling sun while awaiting the examination results. These were the days when troops, artillery, wore blue, of the heaviest kind, and pith helmets, along with enough brass work to keep anyone fully employed, and khaki, with lighter clothing and straw hats, had not been thought of. At drill, the pill box cap was worn, and the way those boys would sunburn and peel was a revelation in human endurance. At drill, at

fuse boring, at gun laying, at camp athletics this battery was in a class by itself, and rightly so. They had the training, the mental back ground, the time, the physical fitness that comes from regular habits. One blistering Dominion Day, (1897, to be correct), they came at night from camp at London and proceeded to Hamilton for the celebration which was to be on a very lavish scale, except that the entertaining commissariat collapsed completely. Nobody slept that night for there was neither time nor place. The street parade and later exhibition drills were done in a way to single out the battery from everything else on the grounds. That night they entrained again, guns, horses and all, and reached Guelph at 1.30 a.m., there to detrain and put everything away. At the long last Major Davidson called out: "Boys, I'm proud of you." And the hills echoed with a cheer. All in the day's work.

One could ramble on for hours. It is submitted, however, that our earlier proposition has been established, that the class entering in October, 1895, may not have included many future pundits but they were a two-fisted crowd. Next!



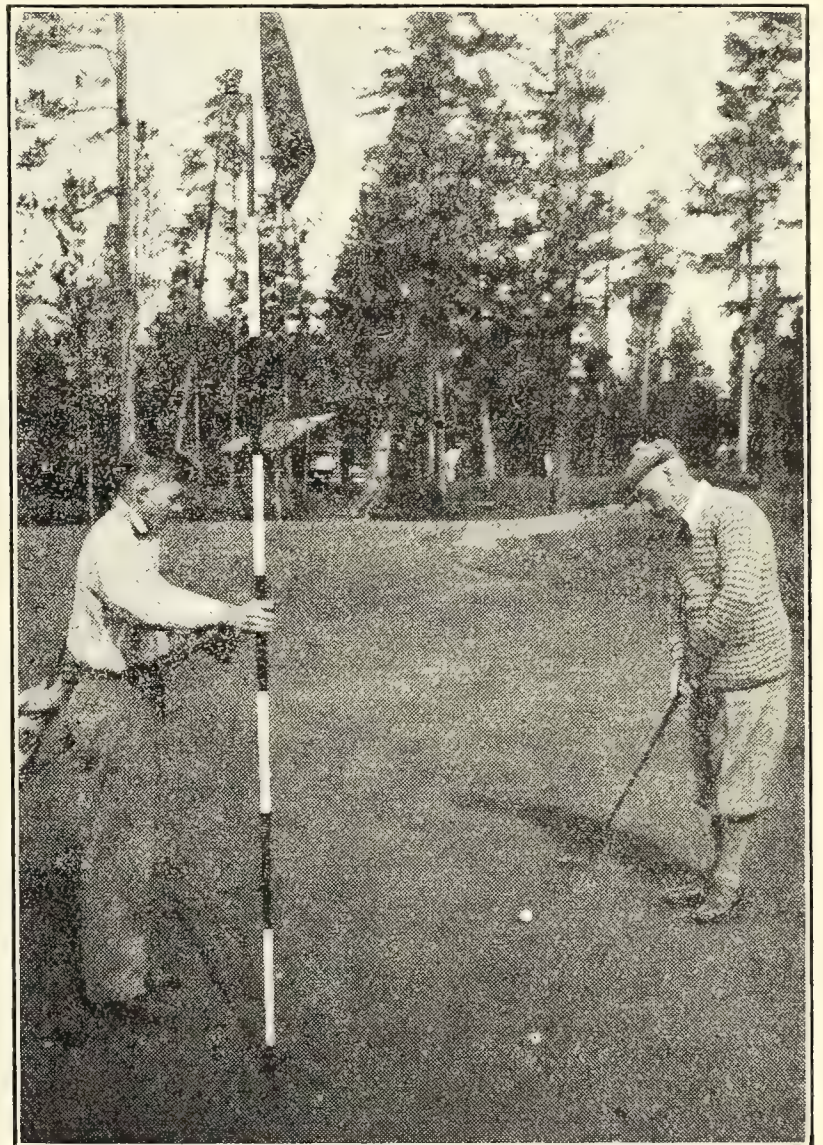
Greenkeeping

By C. A. Tregillus

THE scientific study of grass culture from the lawn making point of view has received considerable attention within the last few years following an awakened interest in outdoor sports. The average person attaches very little importance to lawn maintenance. Lawns are, one might say, rather common place affairs, requiring no care beyond an occasional rolling and mowing or affording a legitimate excuse to idle away an hour or two in the evening with the water hose. A delighted visitor viewing the well kept lawns at Oxford asked an old man tending them how they managed it. "Well, he said, "we roll 'em and mow 'em for a thousand years and there you are." This is the very truth in part but he did not realize that the temperate summers and high humidity of England were just as important as generations of rolling and scything. On the North American Continent we have not this natural advantage of climate and if we wish to keep the grass in a condition the equal of those on the other side, artificial management is essential.

There are many who having fair success with private lawns are under the impression that the management of a putting green is identical and are very much surprised when placed on the grounds committee of a golf club to find that there is a world of difference. The city lawn has a reasonable chance to live, the traffic upon it is light and the amount of top growth permitted provides for corresponding depth of root. In other words the grass is subject to the same treatment as a field not too heavily pastured but with the advantage of abundant water and odd doses of fertilizer. Lawns of this sort however, would be

quite unsatisfactory for such purposes as putting greens where the grass is required to make a thick and compact mat while being shaved down to within one-quarter of an inch of its roots.



The Eighteen Green at Jaspar Park, Alberta, a perfect putting surface vegetated from Creeping Bent Stolons.—Courtesy "Canadian Golfer."

Since grasses vary a great deal in their habits of growth, longevity, resistance to abnormal conditions, diseases, and so on, it is necessary to observe these differences and select those that are best suited to the conditions required of them. On football and baseball fields, subjected to strenuous wear and tear, it is possible to use the coarser types as also on the fairways of golf courses. Such grasses as Kentucky Blue (*Poa pratensis*) (L) Canada Blue (*Poa compressa* L), Red fescue (*Festuca rubra*, L) and

Red top (*Agrostis stolonifera*, L, var major) are well suited for these circumstances. It is quite probable that all these have been introduced from Europe but they have been so long in this continent that they might be considered thoroughly naturalized and are so well distributed that under many circumstances will of themselves take possession of fallow land. It is the usual practice to sow these mixtures and thus allow them to adapt themselves since the different species prefer varying conditions of soil textures, richness, and location and so forth. By the studying of the soil previous to seeding a mixture may be prepared of those that will best respond and the unsuitable ones eliminated.

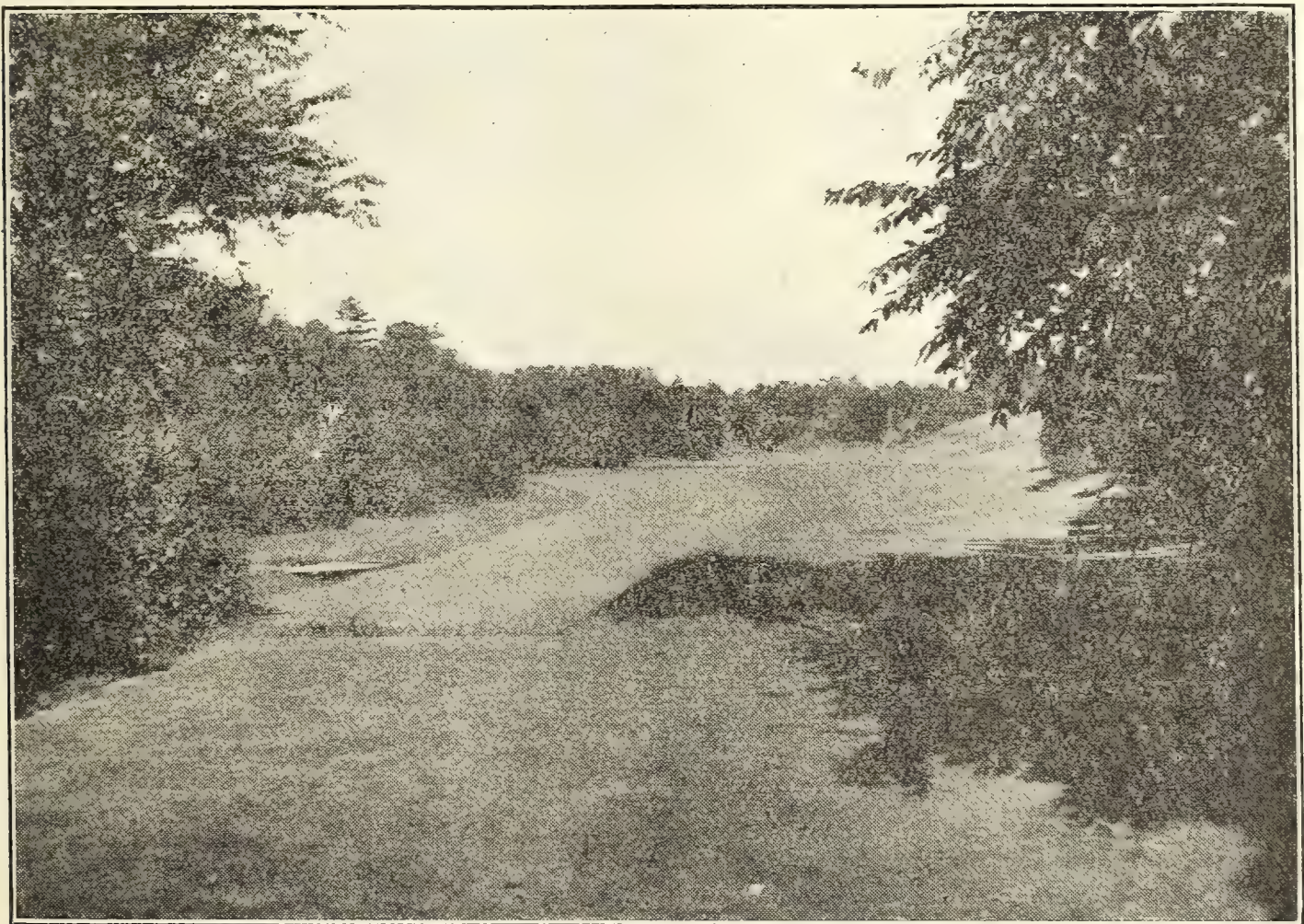
On the other hand we have putting greens and bowling greens that require extreme fineness of texture and perfect continuous surface. Grasses that are sometimes used for this purpose are what the agriculturist calls bottom or sole grasses. The Red fescue from New Zealand, commonly known as Chewings fescue (*F. rubra*, L var. *Fallax*) is well known in this respect. It will stand a fair amount of close cutting and makes a sward of surpassing beauty. It does not creep as readily as some grasses so it is customary to sow a quickly growing grass with it as a filler; Red Top is used in this capacity. Great popularity of late has centered on the Bent grasses and at the present time they are considered the best turf formers we have. There are three species, all belonging to the Genus *Agrostis*, all native to this continent and of little agricultural value. Creeping Bent, (*A. Stolonifera*, L Var. *compacta*) is a grass found along streams and low lying swamps anywhere from the Atlantic to the Pacific almost as the exclusive species because of its ability to thrive in

soils so sodden and sour that others cannot exist. It spreads by means of trailing stems (Stolons) that send out roots at the joints (nodes) and these stems intertwine so freely and weave such a compact mat that the ground is completely monopolized. This faculty is of great value in lawn making since a continuous turf is afforded and it is practically proof against weed invasion. Creeping bent occurs in great diversity of form and colour shade. Some are coarse with long internodes and a low proportion of leaf and stem, while others have the nodes very close together and a high proportion of leaves to stem. The former while it might spread more rapidly is not desirable as weeds might easily lodge in the more open turf that it makes. Strains of this grass that possess desirable qualities have been isolated, named, and propagated in a commercial way.

Creeping bent is a very sparse seeder and up until this year it was impossible to procure the pure seed. In consequence it is handled commercially in the green sod and new surfaces are "vegetated" by cutting the turf into small pieces and scattering it over the ground. The stolons, covered lightly with earth or compost and watered regularly, will, within a short time, take root in the soil and after two or three months will have the appearance of a lawn of some seasons standing. When vegetating small areas the grass is pulled apart by hand or cut with shears but on large projects it is customary to cut the sod into long strips and put it through a silo filler or cutter. It is the usual practice to spread at the approximate rate of one foot of original turf to ten square feet of prepared surface but it is not uncommon to have a newly planted piece of bent spread to thirty or forty times its original area in one season.

There is the Rhode Island Bent also called Brown Top (*A. Tenuis*, L.). This occurs abundantly in the Maritime provinces especially on Prince Edward Island. It does not spread over the ground with the ease of Creeping Bent but presents more the appearance of Red Top except that the difference between the two is very marked around flowering time. Browntop is smaller and finer than Redtop and is more permanent when closely cut. It makes a very fine sward. Brown top is sold on the Canadian market as Colonial Bent and it fetches a very

(*A. Canina*, L.) This is the finest of all turf grasses and much sought after by greensmen. It is stoloniferous but spreads very slowly so that vegetating after the manner of Creeping Bent is not feasible. Hitherto the only source of seed was that which came on the market in South German mixed Bent, a mixture of all kinds including Redtop. Last year however, a pure stand of this beautiful grass was found on Prince Edward Island and it is hoped that shortly it will be obtainable in Commercial quantities.



Scene on the Course of the Toronto Golf Club.—Courtesy "Canadian Golfer."

fancy price. This seed is none other than Brown top which was taken from Nova Scotia to New Zealand a century ago. When the Scotch Canadian Fisherman-farmers went out there to settle, their mattresses were stuffed with the wild hay which on arrival was thrown out. The seed germinating, formed a nucleus of a profitable industry.

A third bent grass and one that may yet supersede the others is Velvet Bent

There are other grasses that on account of their bunchy nature are used for specific purposes. Prominent among these is Sleeps (*Festuca ovina*, L.) This short growing bunchy grass makes admirable rough for golf courses. Shade loving grasses as Rough Stalk Meadow grass are also used in a small way.

It is impossible to maintain grass in the condition required to make a good putting surface without constant care.

During the season of most rapid growth it is the general practice to cut the putting greens every day and some are obliged to be cut twice in order to take off the equal of the previous 24 hours increase. It has been estimated that in the course of a season three feet of solid green material is taken off the average green. This means a very severe drain upon the plant food resources of the soil and one which many fail to realize. Therefore in order to make the grass grow in a strong and vigorous manner the soil must be kept continuously enriched to provide the necessary food. This plant food is largely supplied in the form of compost similar to that which is used in good practice by gardeners and greenhouse men, and is spread as a thin layer over the grass from time to time. On some greens it is not unusual to add these dressings every two or three weeks while others do it twice a year but the general practice is about once a month.

In addition to the compost further plant food must be added to keep the turf young and green. Since the grass must not be encouraged to form flower heads or seed the added plant food is mostly of a nitrogenous character. The weed problem is a very vital one in Greenkeeping. The presence of foreign plants show up very conspicuously on a closely cut surface and besides making the area unsightly will destroy the even texture of the grass surface. On the putting green it is essential that the surface be true and even so that the ball will move only under the influence of the stroke without deflections or deceleration due to varying quality of the mat it is rolling over. The speed and direction of a golf ball is easily influenced by weeds, clover or grasses of a different species. Consequently, a perfect green is one that has an even weight or

texture from one side to the other.

There are many methods of removing weeds, the oldest being the strong arm and back-breaking job of spudding them out. While this is still resorted to, science has devised other means of attack such as stinging or spraying with caustic chemicals or creating soil conditions that, while encouraging grass, are unsuitable for weeds. It has been noticed that the worst weeds as dandelion, chickweed, plantain, and also clover, thrive in a sweet or alkaline soil but weaken in sour or acid soils. Most of the finest turf forming grasses on the other hand seem unaffected by fairly extreme acidity. Taking advantage of this fact it has become the practice to use fertilizers leaving an acid residue in the soil so that such soil acidity may be brought about artificially. How far this can be carried has not yet been determined, but cases are common where a hundred and fifty to two hundred pounds of Ammonia Sulphate have been applied to an area of five thousand square feet or less in one season of five months. This figures out to be at the rate of twelve to sixteen hundred pounds of sulphate per acre. It requires care and discretion to make such concentration without injury to grass. One obvious result of fertilizing the ground so heavily is that the turf is forced to such an extent that weeds are effectively crowded out. The encroachment of weeds is an almost certain indication of declining fertility of soil.

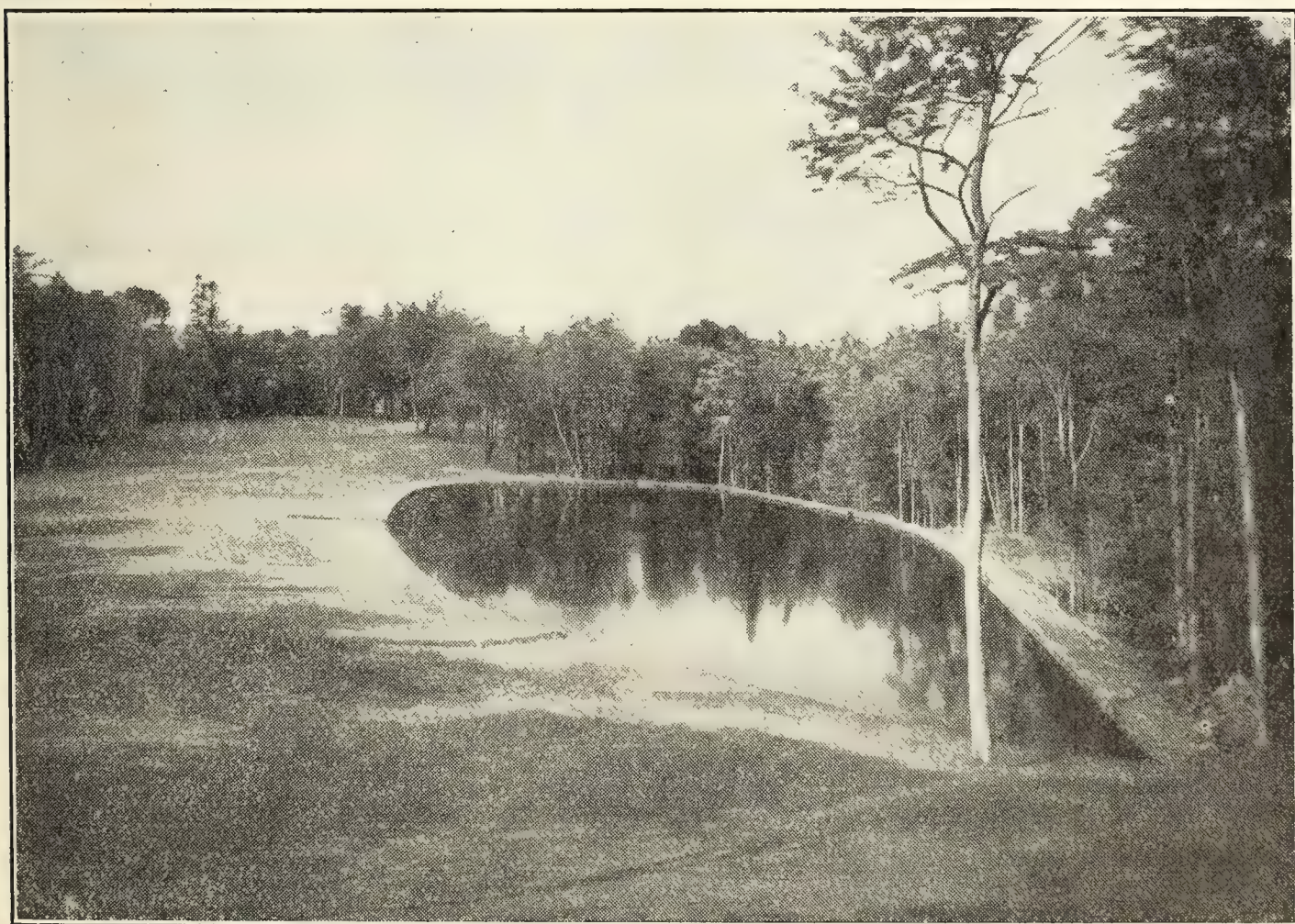
A healthy vigorous turf is also a factor of prevention against disease infection and should disease appear will assist materially in recovery. The study of turf diseases, bacterial and fungal is a comparatively new field and new organisms are coming under observation that hitherto have been unnoticed. It is

becoming the practice to disinfect the grass and soil periodically throughout the summer.

Further there are many pests that are ever ready to mar an otherwise perfect sward, Worms perhaps will head the list, they can be destroyed but will be back again within a short time unless a poison for them is worked into the ground prior to seeding or sodding. Ants are another nuisance, the worst of anything because they are harder to manage and their hills do more damage than do the casts thrown up by the worms. The large white grub is not much of a menace but to the south the small white grub, the larvae of the Japanese beetle is a serious pest. Moles are troublesome in some parts and rabbits and at times crows, swans etc., do their quota of injury.

So altogether the job of superintending a course of 18 holes which constitute a standard golf links is no simple

matter. The average course covers from one hundred and twenty acres to one hundred and thirty acres. Thirty or forty acres require only occasional attention—such as cutting with the hay mower once or twice during the season. The fairways, from sixty to seventy five acres, are mown regularly according to the rate of growth. The greens with attendant bunkers may have a total area of only six or seven acres but cost from seventy to eighty per cent of the whole maintenance bill. Considering that it may cost any figure up to twenty-five or thirty thousand dollars to maintain a course in match condition it is no wonder that clubs are looking for technically trained men to manage the efficient expenditure of such sums. Realizing that the demand will surely come, agricultural colleges in the United States have special courses equipping men for this sort of work.



The 18th Fairway, Ashbourne Golf Club, Halifax, N.S.—Courtesy "Canadian Golfer."

The Relationship of Method to Result in Forage Crop Experiments

By G. P. McRostie, Ph.D.

THE mill of agricultural workers is steadily grinding out bulletin after bulletin, pamphlet after pamphlet, and press article after press article. As a result a confusing array of data confronts the seeker after truth in most phases of matters agricultural. Text books also abound in references to publications treating the pros and cons of the problems being discussed.

The wide differences in opinion concerning the relative values of varieties or agricultural practices cannot help but be confusing to the student seeking after information that can be intelligently applied to the particular problems of any locality. The fact that the large percentage of agricultural bulletins are published by American workers tends to aggravate the condition just mentioned. There are, however, certain well defined reasons for at least a portion of the variance in the published agricultural data. A few of these reasons I propose to discuss at the present time.

Anyone who has had the opportunity of travelling through the agricultural districts of Canada and the United States cannot help but be impressed by the vast amount of variation that exists in different sections of the country. Even a day's travel on the train is sufficient in many parts of the country to provide changes great enough that one might easily imagine himself in a different country. This continent is divided into a great many agricultural zones whose soil and cli-

matic relationships are astonishingly different. In all probability this fact is responsible for the major part of the apparently contradictory results reported in bulletins.

The practice of accepting blindly the published data from any experiment station or university without first considering its soil and climatic relationships is very likely to lead to a wrong interpretation of the data being considered. What is good practice for Vancouver Island in the matter of variety and date of seeding with red clover would result in almost total failure with this crop in the Province of Quebec. A consideration of prime importance in reading a publication is, therefore, the co-relation of the data presented with its proper agricultural zone.

Even within an agricultural zone there is a possibility of considerable variation depending on soil type or local influences different from the average of the zone concerned. If by any chance an experiment is located under conditions appreciably different from the district which it is supposed to represent, its published results may not be applicable because of this disturbing influence. In the case of biennial or perennial forage crops where winter hardiness is of prime importance the interpretation of this quality may be influenced by just such local irregularities as have been mentioned. The location of the test plots in a sheltered area, or on a prominence unduly exposed to the sweeping winter winds,

may result in data which would not be applicable under average conditions.

The published forage crop data, particularly in experiments where hardiness is concerned should, for this reason, contain assurance that the location of the experimental area was representative of the district.

Investigations conducted during the past few years at the Central Experimental farm, Ottawa, have included numerous tests of the effect of various methods of conducting field tests on the results obtained. Our findings have led us to believe that the method of conducting an experiment has a very appreciable influence on the comparative results which may be obtained.

The first phase of this work which we investigated was the influence of including the border foot in comparative test plots of various forage crops. Reference to the results obtained in this connection with a number of strains of western rye grass will serve to illustrate the point. The grass in question is self fertilized, consequently the strains were practically pure lines, thus we would not expect differences to occur due to individual variations within the strain. All of the lots, the data concerning which will be reported in the accompanying table, were transplanted in the field from cold frames and were spaced one plant in every six inch square. Exactly the same number of plants were, therefore, present in each lot considered.

TABLE NO. 1
Western Rye Grass Strains Grown in 1924

Yield per Thousand Plants (absolutely dry weight)

Strain No.	Outside plants Grams	Inside plants Grams	Difference in p.c. of inside plant yield
6	174.1	147.8	17.79
7	177.9	157.0	13.31
9	240.2	178.6	34.49
11	238.6	183.6	29.95
14	167.7	158.4	5.87
18	191.7	176.7	8.48
28	241.9	180.2	34.23
36	249.2	161.7	54.11

An examination of table number one will reveal the fact that the outside plants have given a very decided increase in yield because of the benefits derived from the two foot cultivated paths which surrounded these plots. The significant figures in this table, however, are the differences, reported in per cent., which occur between the outside and inside plant yields. If these differences were uniform the inclusion of the border plants would not make any difference in the relative standing of the different strains. As it is the relative standing, which is the important consideration in variety tests, their inclusion under such circumstances would not be misleading. In view of the differences which actually exist, however, which differences range all the way from approximately six per cent in the case of strain number fourteen, to fifty-four per cent in the case of strain number thirty-six, it can be readily understood that the relative placings of the strains would be very considerably altered by the inclusion of the border plants. Two stations testing the same strains, one of which included the border, the other including the border foot, would get entirely different results. Such results

would not signify the relative value of the strains in question for the particular district, but rather differences depending entirely on the method of conducting the experiment.

Data secured from comparative test plots of red clover, alalfa ad mixtures of various grasses and clovers also indicate that where cultivated paths surround plots the inclusion of the border foot is accompanied by a great deal of inaccuracy. We have been told that this should not be the case, as each plot has the same treatment and has equal opporunity to take advantage of the benefits of the cultivated pathways. If all plants of the same species were alike in their habits and morphological structure, such a contention would be well founded. Such is not the case, however, as we have found, in common with many other investigators, that plants differ widely in their ability to take advantage of the extra moisture and plant food made available by the cultivated path. A knowledge of how comparative test plots were treated with regard to the

removal or retention of the border foot is consequently desirable for a proper interpretation of forage crop results.

Many other sources of variation might be mentioned, such as: the influence of rate of seeding, time of harvesting, etc., all of which could be shown to have a definite bearing on the relative results obtained. We will only say in connection with these that we should have an understanding of just how the experiment was carried out with regard to the practices mentioned.

The final consideration which we wish to bring to your attention is the relationship between the criterion which we use to compute our yields and the result obtained. This entails a consideration of the relative merits of green weight, field cured weights, and absolutely dry matter determinations in computing yields. The very small amount of material presented in the form of a table will give us some idea of the variation which exists in these different methods of computing yields:

TABLE NO. 2
Mixtures of Grasses and Clovers
Absolute and Relative Yields: Border Excluded
Yield of Plot 31=100

Plot No.	Green yield		Relative Yield	Field		Relative Yield	Absolute		Relative Yield
	Tons	Lbs.		Tons	Lbs.		Tons	Lbs.	
27	11	236	74.95	2	588	106.28	2	1129	94.37
28	12	1356	85.47	2	1147	119.61	2	1483	100.88
29	14	1105	98.10	2	1518	128.24	2	1889	108.35
30	14	1761	100.31	2	698	109.18	2	1458	100.42
31	14	1668	100.00	2	303	100.00	2	1435	100.00
32	15	280	102.06	2	317	100.32	2	1510	101.38
33	15	403	102.48	2	212	97.89	2	1209	95.84
34	17	1847	120.83	2	674	108.62	2	1595	102.94
35	17	1603	120.00	2	533	105.35	2	1602	103.07
36	13	427	89.08	2	374	101.65	2	1280	97.15

The yields of ten plots seeded to mixtures of grasses and clovers are shown in terms of the green weight, field cured hay and absolutely dry matter per acre. The relative yields based throughout on the yield of plot thirty-one are also included. It can be readily seen that the relative placing of these different plots would be very materially changed depending on whether the comparison was made in terms of green yield per acre, field cured hay per acre or absolutely dry matter per acre. As the feeding value depends on the amount of absolutely dry matter it would appear that considerations based on field cured hay or on green yields would be, to say the least, misleading.

The obtaining of absolute dry weights has in the past entailed considerable labour, consequently the substitution of relative weights of material dried inside to approximately a constant weight has been fairly common practice. The method of arriving at these constant weights has an appreciable influence on their accuracy. A number of stations, however, appear to

have worked out methods in this connection which give reasonably reliable results. For the making of comparisons over a wide range of country it is our opinion that the absolute dry matter content is least liable to variation in results.

Even using the absolute dry matter content, however, there is still a possibility of at least a small amount of variation creeping in. Recent investigations which we have conducted indicate that the rate of drying the shrinkage sample and the length of time which elapses between the time of extracting the green sample and its oven drying, influences the results obtained. Samples which we have immediately dried have on the average contained approximately two percent more dry matter than similar samples of the same material which were air dried previous to being oven dried.

A great deal of valuable data is available for our consideration but if we are to arrive at its true significance we must do so in the light of a careful consideration of the how, when, where and why of the experiment.



The Irish Potato

By Paul A. Murphy

IT looks as if the age of romance, like that of chivalry, is dying, if not dead. Soon all the cherished beliefs of our childhood will be exploded or explained away, and already the little nut tree that bore the silver nutmeg and the golden pear has been ascribed to the exuberance of a nurseryman when preparing his annual catalogue. Similar liberties may be taken at any moment with the likeable King Cole; and perhaps the breed of Mary's lamb has already been determined.

Now it is the turn of the potato. We are asked to believe that Raleigh did not find it in Virginia, and, *à fortiori*, did not introduce it into Ireland; that he did not plant it on his estate at Youghl (pronounced Yo-hal) that his gardener did not serve up the "apples" at table, and discover the tubers only when he was ordered to throw the useless plant away; and that the Irish did not learn to plant the prolific tuber from the great Favourite himself. Exit Raleigh. Now for Drake.

A statue has been erected to Drake in Offenburg, Germany, as the "introducer of the potato in Europe, in the year of our Lord 1580." This is the whole story complete to the date, and we may take it that the careful German erectors were quite sure of their ground, and looked up their history books to make sure it was not 1581. George Birmingham tells a delightful story of a returned American descending on an isolated western Irish village and galvanising the inhabitants into action by his wonder that their most

famous son General John Regan, a name to conjure with under Southern Cross, is not commemorated in his native place. Carried away by his assurance, and ashamed to confess their ignorance, the inhabitants erected a monument to the great soldier by public subscription, and the document does not come until the Lord Lieutenant is about to unveil the memorial to the mythical hero. Can it have been that another cobbler strayed from the last and the straight and narrow way—that Offenburg was out-Koepenicked?

This is the second demand on our credulity: that Francis Drake did not introduce the potato, either on his return from the circumnavigation in 1580 or in 1586, when he plundered the West Indies and then repatriated the survivors of Raleigh's unfortunate Virginian colonists; that he did not give the plant to his gardener; that his gardener did not serve up the "apples" at table; and that the tubers were not discovered when the useless plant was ordered to be thrown away. Alas for Drake: Now for Hawkins.

If Tradition is not now ashamed to life her head, we may permit her to say that Hawkins, the slaver—his crest was a negro in chains—first landed the potato at Galway on the west coast of Ireland. This is not a German story, so, unfortunately, the date cannot be given. Hawkins never visited Bogota, where he is supposed to have found the potato, but he got "potatoes" in Venezuela in 1565 which must have

been sweet potatoes, it is said, because no other kind existed there. Consequently we are again asked to believe that Hawkins did not introduce the potato to North America or to Europe. It follows, therefore, that he cannot have given them to his gardener (if he had one, which history does not relate; but which he would, no doubt, have done if he had; and which alternatively he could not have done, if he had no potatoes); the gardener cannot have served him the "apples," etc., etc.

The destroyer of these beautiful legends—the beauty of which is that though improbable and mutually inconsistent they can still exist side by side—is (of course) an American (1. Safford, W. E. *The Potato of Romance and of Reality*. *Journal of Heredity*, Vol. 16, 1925), and a very interesting account he gives of their absurdities and their origins. In short the trouble arose from the fact that the name "potato" was first given to the sweet potato, which occurred in the West Indies among other places and is said to have been known in Europe long before its rival. How that name was later transformed to another plant introduces us to the villain of the piece, no other than John Gerard, of London, author of the famous *Herbal*, published in 1597. Gerard had our present potato, *Solanum tuberosum* (tradition, the deceiver, says he got it from Drake), which he illustrates unmistakably, but which he describes as the "Battata of Virginia or of the Virginians, otherwise Pap-pus," pretending to have received from Virginia the original tuber. Now there existed at that time in North America no tuberous *Solanum*, and *Solanum tuberosum* itself

was not introduced for another 120 years, or so—but of that later. There did, however, exist there a tuberous plant *Glycine apios*, belonging to the Leguminosa, which Raleigh's colonists had already described as "a kind of root of round form, some of the size of walnuts, some far greater, which are found in moist and marish grounds growing many together one by another in ropes, or as though they were fastened with a string"—the widely distributed native North American plant, known as openawk, and sometimes as groundnuts or Indian potatoes. This plant added to the confusion in the minds of some, as perhaps in that of Clusius; and Gerard, probably quite honestly, connected a tuber acquired in some unknown manner—possibly one he did not care to disclose—with the *Glycine* described nine years before from Virginia, and called it the Virginia potato. And if it came from Virginia, who was more likely to have introduced it than one or other of those famous navigators, Raleigh, Drake or Hawkins?

Thus the plant originally brought to Europe, from the West Indies probably, as *Battata*—the sweet potato, lost its name to the later introduction from Peru which was first known as *Papas*—the "Irish" potato; and because of the similarity of the latter to the Openawk of Virginia, it was assumed by Gerard to have originated in North America.

Safford remarks, bearing on the confusion apt to arise when similar plants from different countries are compared, that "the majority of laymen have not the slightest idea that the common beans of America are quite distinct from the classic

faba of the Romans." The same is true on the more classical ground of Provence. Fabre conclusively proves that the two plants are distinct, for, he says, even if Virgil did not give a date for sowing beans which would inevitably mean the death of the later introduction from frost, it must be perfectly clear that the latter cannot have existed in Roman times, else the comedians would be sure to have mentioned it for its characteristic effects when partaken!

Safford's case stands or falls with his statement that *Solanum tuberosum* did not occur, at the period of its introduction into Europe, in North America, Mexico, the Caribbean Islands, or even in Venezuela, which looks like the Achilles heel of the argument. Its distribution was confined to the bleak highlands of Columbia, Ecuador, Peru and Chili, coming down to the sea level in its southern range. The history of the potato is fascinatingly carried back to Safford to pre-historic times by means of the food preserved in ancient Peruvian tombs, and by very realistic and beautiful vases shaped like the tubers, complete to the eyes. The plant it appears is so long in cultivation that it does not now occur wild.

Who then introduced the potato to Europe? Some Spaniard, Safford says, and one would say with right, before 1585. From Spain it spread to Italy, and thence to Austria and the Austrian Netherlands. But though it was cultivated in Italy about 1585, Ireland is the real foster-mother who first took the stranger to her breast, nursed it and loved it, and sent it out to the four corners of the globe, even to the continent

of its origin. How it came to Ireland is unknown, but it was probably introduced by Spaniards trading to the south and west coasts in wine, hides and wool. According to Safford, the crop was cultivated in the Green Isle in 1663 at latest. We can take that date back more than another fifty years, for in the first decade of that century it was already a field crop—and an inconvenient one at that, which the English soldiers were not able to burn, as they could the corn crops, to force the inhabitants to submission!

The climate of the country makes it certain that these potatoes were *Solanum tuberosum*, but there are still some obscure points—the "common potatoes" of Gerard and the potatoes Shakespeare mentions. These have been assumed to be the sweet potato—a curious conclusion since the plant does not grow in England, and particularly so in the light of our present knowledge that the other potato was a field crop in Ireland during Shakespeare's lifetime.

The potato actually did not reach North America until 1719, when Irish emigrants took it to Rockingham County, N. H. These poor people naturally had no gardeners to whom to give the tubers to plant, but, being kindly folk, gave them to their neighbours. Then did "history" repeat itself again. The neighbours tried to eat the "apples," without much success, and it was only when the ground was ploughed that the tubers and the mistake were discovered.

Perhaps, after all, the "Irish" potato is not much a mis-nomer, although it is Irish only by adoption, and the potato only by mistake.

Advances in Animal Nutrition During Past Quarter Century

By F. B. Morrison, Professor of Animal Husbandry and Assistant Director,
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ALTHOUGH twenty-five years is but a brief span of time in the history of many nations, the past twenty-five years has largely revolutionized our knowledge of animal nutrition and stock feeding.

Indeed the developments in this field of science have been just as marvelous as the development of the automobile during this same period, the evolution of the aeroplane, or the remarkable discoveries which have given us the radio. However, an important difference lies in the fact that nearly everyone has adopted the automobile as a common means of transportation in this country, and we are all fast adopting the radio. On the other hand, many farmers have failed to adopt efficient methods of stock feeding which have been made possible by the progress during this past quarter of a century.

These men do not realize that it is as absurd to feed their stock in 1900 fashion as it would be to attempt to use to-day one of the primitive automobiles that frightened horses and pedestrians alike twenty-five years ago.

Balanced Rations in 1900

Even well back in the preceding century, scientists specializing in animal nutrition had appreciated the basic fact, often ignored by farmers, that for efficient and profitable production live stock must secure the right kind of raw materials in their food and that these materials, protein in particular, must be supplied in proper proportions.

Since Emil Wolff, the German chemist, brought out his feeding standards

in 1864, there was for nearly half a century little advance in the knowledge concerning the nutrients required by the different classes of farm animals. No one yet had appreciated, for example, that a dairy cow needed more nutrients to produce each pound of milk if the milk was high in butter fat, than she required if her milk contained a relatively low percentage of fat.

The old Wolff Standards were somewhat modified by Lehmann in 1896, though no very radical changes were made at that time. These standards, which were known as the Wolff-Lehmann Standards, were then used most widely throughout Europe, and also the United States in computing rations for live stock until 1915.

One of the most important contributions to the scientific feeding of dairy cows was made by Professor T. L. Haecker, at the Minnesota College of Agriculture. In conducting extensive experiments with cows, he found that the requirements for milk production depended not only on the amount of milk a cow produced, but also upon the fat percentage of the milk. This seems so self evident to us to-day, that it is difficult to realize that skilled chemists had previously failed to appreciate this truth.

As the work of the Agricultural Experiment Stations in the United States developed, naturally many investigations were carried on to determine more efficient methods of feeding farm animals. Gradually much data was secured which showed definitely

that the old Wolff-Lehmann feeding standards recommended a much larger amount of protein for certain classes of animals, especially dairy cows and fattening animals, than was actually needed for optimum production. In spite of these more or less isolated observations, most authorities continued to use the old Wolff-Lehmann feeding standards. These were uneconomical, since in most sections of the country protein-rich feeds were more expensive than feeds rich in carbohydrates.

In addition to these feeding experiments conducted by various experiment stations, much information of a very great theoretical value was being secured in investigations on the energy value of feeds. These were carried on by such European scientists as Kellner and Fingerling, and especially by the late Doctor Armsby in this country. The latter conducted extensive investigations with steers by means of the respiration calorimeter at the Pennsylvania Institute of Animal Nutrition.

These researches upon the energy value of feeds showed definitely that the digestible nutrients in roughages, which are high in fibre, have a much lower value than the digestible nutrients in concentrates, due primarily to the fact that more energy is lost in the so-called "work of digestion" in the case of feeds high in fibre.

On account of the immense amount of labor involved in the determination of the energy value of feeds, data of this kind can be secured but slowly. For this reason, in their many years of painstaking work Kellner and Armsby together were able to make determinations on less than thirty individual feeds or concentrate mixtures. While these values are helpful in estimating the probable net energy values of other feeds not yet tested, such computed re-

sults are but approximations.

Moreover, these results were secured chiefly with steers and later investigations have shown rather widely differing values for other classes of animals. For these reasons, in the opinion of the author, it is still just as wise to compute balanced rations upon the basis of "digestible nutrients" as to compute them in terms of "net energy."

It has been previously mentioned that the Agricultural Experiment Stations had gradually accumulated much evidence showing that the old Wolff-Lehmann Standards were not economical as applied to the usual American conditions. Appreciating this fact, the author attempted in 1915 to combine in a set of standards what appeared in his judgment to be the best guides available at that time in the formulation of rations for various classes of animals. The recommendations gathered together in these standards were taken from many sources. For the reasons stated previously, the standards were expressed, not in terms of net energy, but in terms of **digestible crude protein** and **total digestible nutrients**.

These standards were formulated, not with the idea that any set of feeding standards can be taken as hard and fast guides to live stock feeding, but that they might serve as approximations which might prove useful to those desiring to compute economical balanced rations for farm animals.

How Far Can Feeding Standards be Followed?

Feeding standards give no recommendations with reference to several exceedingly important factors of nutrition discovered during recent years. These are the quality, or kind of protein, the amount and kind of mineral matter, and the amounts of the differ-

ent vitamins which are needed by the various classes of live stock. Our knowledge of all of these recent factors in nutrition is yet too fragmentary to express in the terms of a feeding standard. Indeed, it is doubtful whether certain of these nutritonal factors can ever be taken into consideration in any future feeding standards.

In the light of our present knowledge, we realize that these other factors are just as important in a successful ration as the amount and proportion of protein. On the other hand, the discovery of these newer factors does not mean that we can disregard or minimize the fact long known, **that a certain amount of digestible crude protein must be supplied** in a ration if efficient results are to be secured.

Quality of Protein is as Important as Amount of Protein

One of the most important advances in our knowledge during the past quarter of a century has been the discovery of the importance of the kind or quality of protein in stock feeding. It is now well known that proteins are exceedingly complex nitrogenous compounds, made up of 18 to 20 different amino acids. The complexity of proteins is shown by the fact that chemists estimate that each molecule of the various plant and animal proteins has from 2,000 to 100,000 atoms.

Scientists have discovered that some proteins contain all of the different kinds of amino acids, while others are incomplete and do not contain certain of these "building stones." They have furthermore found that animals need for growth, and even life itself, all of these different amino acids. Furthermore, they can not manufacture in their bodies any missing amino acids from other amino acids in their food with the exception of certain of the sim-

pler ones. Therefore, they must receive in their feed an ample supply of all of the "essential" amino acids, or growth will be checked, production lowered, or even health destroyed.

Extensive investigations by Osborne and Mendel and others have shown that the chief proteins of all of the cereal grains are of the same general kind or composition. For example, zein, the chief protein of corn, entirely lacks certain of the essential amino acids.

On account of this, the protein mixture supplied by any single grain or any combinations of grains, is too low in some of the essential amino acids, which a young animal needs to build its body tissue, or which a cow needs to produce milk. On the other hand, investigations show that milk protein contains all the amino acids in good proportion for the use of animals.

At the present time much careful work is being done in various laboratories to study the nutritive value of the proteins in different feeds. These investigations will, without question, throw much light on more efficient ways of compounding rations for live stock.

As an example of such investigations, experiments carried on by McCollum, Hart, and Steenbock, at the Wisconsin Experiment Station, may be cited. When young pigs in nutrition experiments were fed only corn, wheat or oats, as the only source of protein, they retained in their bodies for growth only 23 to 28 per cent. of the protein in their feeds. Though linseed meal, properly used, is a most excellent stock feed, when this feed was used as the only source of protein in a ration, it was found that the protein was of even poorer quality than that of corn, only 17 per cent being stored.

On the other hand, with skim milk 66

per cent. of the protein in the milk was stored by the pigs. Purified milk casein was nearly as efficient, 51 per cent being retained.

Many people believe that a variety will of itself meet any deficiencies. This is an unsafe conclusion, for it was found that a mixture of one-third each of corn, wheat and oats was only a trifle better than any one of the cereals alone. On the other hand, when a mixture of three-fourths corn and one-fourth linseed meal was fed, much better results were secured than with either corn or linseed meal alone, 37 per cent of the protein being stored.

Of all of the feeds tested, skim milk was the most efficient supplement to the cereals. Pigs fed 1-3 lbs. of skim milk with each pound of corn stored about 62 per cent. of the protein in their feeds. Corn and tankage and barley and tankage also were efficient combinations, though ranking somewhat below corn and milk.

Of proteins from plant sources, investigations have shown that the proteins of soybeans and peanuts rank high. These feeds are well suited to serve as supplements to the cereal grains, so far as quality of protein is concerned.

Practical feeding experiments conducted with the various classes of farm animals have shown clearly that the quality of protein is usually of much more importance in feeding growing, fattening pigs and in feeding poultry than it is with other classes of stock. This is due to the fact that cattle, sheep and horses consume a much larger proportion of roughage than do pigs or poultry. The quality of protein in roughage, especially in legume hay, is much better than that in the cereals. Consequently, when these classes of animals are fed legume hay as a con-

siderable part of their roughage allowance, there is not so much difference in the efficiency of the proteins supplied by various protein-rich supplements, as there is with pigs and poultry.

Protein from animal sources has an especially high value for swine and poultry due to these very reasons. In view of the limited supply of feeds of animal origin, it is fortunate indeed that for other classes of animals, after the usual weaning age, highly efficient rations may readily be made up without including any such feeds.

Mineral Matter Indispensable in Rations

Twenty-five years ago little attention was paid to the mineral content of rations fed live stock. It was recognized that stock should receive common salt (sodium chloride) in addition to the amount contained in their usual feeds. Since that time there has been a remarkable development with reference to our knowledge of the mineral requirements of live stock.

We now know that it is just as essential that rations contain an adequate amount of various mineral nutrients as it is that they supply plenty of protein. Fortunately, Dame Nature has provided for humans and live stock as well quite adequately with reference to mineral matter. The foods we eat and the feeding stuffs we furnish live stock contain all the necessary mineral compounds, at least in small amounts. Moreover, the body is able to use many of these compounds over and over, taking them back into the circulation after having been once used.

Calcium and Phosphorus May be Lacking

Since over 90 per cent. of the mineral matter of the skeleton consists of calcium (lime) and phosphorus, these

mineral compounds are most apt to be lacking, in addition to common salt, in the usual rations fed to live stock. A lack of these two minerals is especially apt to occur in the case of young growing animals, which need an abundance for developing their skeletons, and for dairy cows, which are using a large amount of calcium and phosphorus in making milk.

It would be impossible to discuss, in the confines of this paper, the great amount of important work which has been done in recent years on the mineral requirements of live stock. As an example of the importance of these investigations in practical live stock feeding, there may be mentioned experiments which have been carried on continuously since 1908, by Professor Hart and his colleagues at the Wisconsin Experiment Station with growing heifers and dairy cows.

In these trials it has been found that when cows are fed straw for roughage along with grain and grain by-products, they usually produce dead or weak calves. Young heifers raised on such rations even fail to grow normally, and in some cases suffer from nervous breakdowns.

For a few years the nutritional experts were at a complete loss to understand the reason for these astonishing results. However, it has been found that the disasters are due to a lack of lime or calcium in the ration, and a lack of a vitamin which is needed in the assimilation of calcium by the body. When calcium has been added in such forms as calcium phosphate (the chief mineral constituent in bones), or even by adding wood ashes, much better results are secured.

However, when alfalfa or clover hay are substituted for half the straw in these rations, even better results are

obtained, and entirely normal offspring are produced. This is because such hay supplies not only calcium, but also the vitamin.

There is, however absolutely no proof that any mineral mixture will prevent or cure the contagious form of abortion. This is caused by specific germs, and is different from abortion caused by lack of calcium in the feed.

Numerous experiments at various stations have shown the importance of supplying plenty of calcium in the rations of swine. For example, rations such as corn and soybeans or corn and peanuts are radically improved by adding a calcium supplement. On the other hand, when the feeds which make up the ration already supply a fairly liberal amount of calcium, there may be little or no benefit from adding any mineral supplement to the ration except common salt. Much scientific work shows that calcium supplements are highly important in poultry feeding.

When farm animals are fed properly balanced rations containing ample protein, there is less apt to be a deficiency of phosphorus than of calcium. This is because most protein-rich feeds are high, not only in protein but also in phosphorus. Such is especially the case with wheat bran, wheat middlings, linseed meal and cottonseed meal.

Mineral Requirements for Milk Production

It has long been known that milk is rich in mineral matter, especially in calcium and phosphorus. However, up to a few years ago it was assumed that when dairy cows were fed common, well-balanced rations containing plenty of protein and a liberal amount of legume hay, there could be no deficiency in either calcium or in phosphorus, for legume hay is rich in calcium, and

protein-rich feeds are in general high in phosphorus.

Surprising results were, however, secured in extensive experiments at the Ohio Experiment Station by Doctor Forbes. In these trials high-producing cows have been fed such excellent winter rations as alfalfa or clover hay and corn silage for roughage, along with corn and such high-protein concentrates in addition as wheat bran, cottonseed meal, linseed meal, dried distillers' grain, or gluten feed.

On these rations, which have always been considered ideal for dairy cows, in most instances the animals lost calcium, phosphorus, and also magnesium from their bodies, in spite of the fact that the feeds they were given supplied what would appear to be ample amounts. For some reason or other, the cows were unable to assimilate and retain enough of the liberal supply of these mineral nutrients in their feed to meet the heavy requirements in producing the large amount of milk they yielded.

Even when abundant amounts of calcium, or both calcium and phosphorus, were added to their ration in such forms as steamed bone meal, calcium carbonate, or calcium lactate (a soluble form of calcium), the losses of these mineral constituents in the body continued. The reason for this little-expected condition is still a problem. Possibly the milk producing capacity of our dairy cows has been so increased by selective breeding that it exceeds the ability of high-yielding cows to assimilate sufficient mineral nutrients from their feed to meet the heavy demand in producing the large flow of milk during the first part of the lactation period. Later on in lactation, or when they are dry, they undoubtedly are able to build up again

the stores of these mineral constituents in their bodies.

In recent experiments at the Wisconsin Experiment Station by Professor Hart and his colleagues, it has been found that cows are able to assimilate calcium much more completely from fresh green feed than from dried forage. Also, well-cured alfalfa hay was superior to that which had been poorly cured. These trials indicate that fresh green forage and well-cured dried hay contain considerable amounts of the vitamin discussed later, which aids in assimilating lime from the food.

All this work on the mineral requirements of dairy cattle is so recent that we do not yet know just how far-reaching the results may be in practical feeding. These various trials, however, emphasize the importance of pasture and other green forage for dairy cows during the growing season, and of furnishing an abundance of legume hay during the rest of the year.

Also the cows should be dried off six to eight weeks before freshening, and during this time should be so fed that they will be in good condition at calving. This rest period will give them an opportunity to rebuild the stores of calcium and phosphorus in their bodies, which may have been depleted by the drain of milk production.

If poor roughage must be fed to dairy cows, such as hay from the grasses (not legume), corn stover grown on acid soil, or straw, there should be added to each 100 lbs. of the concentrate or grain mixture 3 to 4 lbs. of ground limestone, wood ashes, or dried marl. Ordinary dolomitic limestone may be used satisfactorily.

If there is not 20 per cent. of high-phosphorus feeds in the concentrate

mixture (such as wheat bran, wheat middlings, linseed meal or cottonseed meal), it is best to use 3 to 4 pounds of steamed bone meal or bone black with each 100 lbs. of the concentrate mixture, instead of using the limestone, wood ashes and marl. Bone meal and the bone black supply both calcium and phosphorus, while limestone, wood ashes and marl furnish calcium, but practically no phosphorus.

If plenty of alfalfa, clover, soybean or other legume hay is fed, then there may possibly be no advantage in adding a calcium-rich mineral supplement to the ration. However, even with legume hay available for winter feeding, it can do no harm and may do considerable good to add one of these lime carriers to the ration. A high-producing dairy cow is entitled to the benefit of any doubt; therefore, it is wise to be sure that she is supplied with plenty of calcium and phosphorus.

Iodine Sometimes Necessary

Especially in certain sections of the northwestern States, during recent years, heavy losses have been experienced of new-born pigs, lambs, kids, calves, and foals, due to goitre, or "hairlessness." The young so affected are born dead or weak, are frequently hairless, and commonly have enlarged necks. This is due to the thyroid gland in the neck being diseased and enlarged, just as in the case of humans suffering from goitre, brought about probably by a lack of iodine in the feed, or a failure to absorb and use the traces of iodine usually present. Recent investigations have shown that this trouble with the offspring can be overcome by administering iodine in the form of potassium or sodium iodide to the pregnant dams.

Vitamins Are Necessary for Life

A few years ago the word "vitamins" was unknown, but now nearly everyone has heard of these mysterious substances. Perhaps to many persons the statements made concerning the marvelous effect of these compounds in the human diet and likewise in stock feeding have appeared highly improbable. They have wondered "Just how much does all this talk about vitamins amount to anyway? Is there any need of giving any consideration to them in planning the diet of my family or in feeding live stock?"

Practically all the discoveries about vitamins have been made in little more than a decade. Although our knowledge concerning them is far from complete to-day, yet brilliant progress has been made during the past few years by the scientists studying these matters. Therefore, many conclusions may now be safely drawn concerning the importance of vitamins in the feeding of humans and in the feeding of farm animals, as well.

Thus far four vitamins have been discovered, and possibly a fifth. The history of the development of the present day knowledge regarding vitamins is exceedingly interesting but cannot be discussed here. All that can be attempted is to give a few conclusions regarding the importance of each vitamin in stock feeding.

Vitamin A

The first vitamin to consider is Vitamin A, a fat-soluble vitamin. Absence of this vitamin in the ration of young animals will check growth, produce blindness, cause respiratory diseases, and eventually result in death.

From the standpoint of human nutrition the most important facts regarding this vitamin are that it is

contained in liberal amounts in butter-fat, the yolks of eggs, salad greens, and cod-liver oil.

From the standpoint of stock feeding the most important facts are that Vitamin A is contained in abundance in all green plants and also in green-colored, well-cured hay. Furthermore, yellow corn is rich in it, while white corn and most other cereals contain little. From these statements it is evident that stock which are on pasture or which have plenty of good hay, will not suffer from a lack of this vitamin.

Vitamin B

Years ago thousands of Oriental people living chiefly on polished rice, suffered from a nervous disease called beri-beri. Investigations have shown that this disease is caused by the lack of Vitamin B, a water-soluble vitamin, and can be readily cured by supplying foods rich in this dietary essential.

From the standpoint of live stock feeding it is important to realize that most all ordinary stock feeds are rich in this vitamin. Hence, there is no evidence that farm animals usually suffer from any deficiency.

Vitamin C

This vitamin prevents scurvy, a serious disease affecting humans when they can get no fresh food. Vitamin C is of even less importance than Vitamin B in stock feeding, for man, monkeys and guinea pigs are the only animals known to be affected with scurvy.

Farm animals either do not require any of this vitamin, or else they need only such extremely small amounts that they always get enough in their rations. At least there is no definite proof that they ever have scurvy.

Vitamin D

From the standpoint of stock feeding the fourth vitamin is very import-

ant. This vitamin, which prevents the disease called rickets, is known as Vitamin D, or the anti-rachitic vitamin. This disease of rickets often seriously affects the bones, especially of young animals. In young animals suffering from the disease, the calcium and phosphorus are not deposited properly toward the ends of the bones, where the growth occurs.

Rickets may be caused by a lack of calcium or phosphorus in the food, or by a failure of the body to assimilate these minerals. Even when an animal is supplied with plenty of calcium and phosphorus, it is apparently unable to use it for bone formation unless there is plenty of the anti-rachitic vitamin in its food.

Sunlight also has an important relationship to rickets. Animals in darkness or out of direct sunlight are more susceptible to rickets than those exposed to sunlight. Sunlight will even cure rickets, if not too far advanced. The rays in sunlight which have this anti-rachitic property are the ultra-violet rays; i. e., the invisible rays of even shorter wave length than the violet-rays.

Many investigators are studying the effect of ultra-violet light and sunlight upon animals under various conditions and exceedingly interesting results are being secured. It has even been found by Dr. Steenbock, at Wisconsin, and later by Dr. Hess, in New York, that ultra-violet light will confer on certain foods the anti-rachitic property. Just what will be the practical significance of all these investigations it is yet too early to predict.

Under winter conditions in the northern States, young pigs are especially subject to rickets. They often become lame and stiff, particularly in their hind legs, and farmers call the

trouble "rheumatism" or "paralysis." This condition can usually be prevented by including a small percentage (about 5 p.c.) of good green colored alfalfa hay in the ration, and providing plenty of calcium. Apparently dairy cows may also suffer from a lack of the anti-rachitic vitamin under winter conditions, as has been pointed out previously.

Vitamin E

Still a fifth vitamin has been discovered recently by Dr. Evans, of California. This is called Vitamin E, or Vitamin X. This vitamin is concerned with reproduction. It has been found that animals which do not receive the vitamin in their food do not reproduce. Little is yet known concerning this vitamin and its occurrence in various foods. Apparently, however, it is present in most ordinary stock rations.

Increasing the Efficiency of Rations

To illustrate the way in which feeds may be combined to increase the efficiency of rations, experiments that we have been conducting with pigs at Wisconsin may be mentioned. During the past eight years we have been comparing the efficiency of various combinations of feeds for pigs.

In these experiments we have followed the example of many investigators and have taken the excellent ration of yellow corn and tankage as the standard of comparison. Used as the only supplement to corn, for young pigs not on pasture either linseed meal or wheat middlings give poor results. Even when the pigs are on good pasture, they will gain only about 1.1 lbs. a head daily on corn and either linseed meal or wheat middlings, while other pigs have gained about 1.4 lbs. on corn and tankage.

Reduced to a money basis, linseed

meal when fed as the only supplement with corn to pigs on pasture has been worth only about \$19 a ton, compared with tankage at \$60 a ton. These are the results, not from a single trial, but the average of five separate experiments.

If all the swine raisers who do not have skim milk or other dairy by-products decided to use tankage to secure efficient animal protein, the supply would fall far short of the demand. We have therefore conducted trials to see whether we could not dilute tankage, in order to make it go further.

What we did was to mix linseed meal and tankage in equal parts and self-feed this mixture as a supplement to corn, also self-fed. To our surprise, for pigs on pasture this mixture gave even better results than the standard ration of corn and tankage. Linseed meal, which was worth only about \$19 a ton when fed as the only supplement to corn on pasture, was worth \$76 a ton when added to a ration of corn and tankage.

We tried out this same combination for raising fall pigs, which had no pasture. Under such conditions only fair results were secured.

Finally, we added to each 100 lbs. of feed 5 lbs. of chopped alfalfa hay or alfalfa meal, as a pasture substitute, to furnish Vitamines A and D. On this combination—corn, tankage, linseed meal and a little chopped alfalfa hay—remarkably good results have been secured. Indeed, in seven experiments fall pigs started on this ration at weaning time have made as rapid gains as others on yellow corn with plenty of skim milk.

In this ration, linseed meal and alfalfa hay both appear to be necessary. If either of these ingredients is left out, the results are less satisfactory.

Furthermore, too much alfalfa hay must not be incorporated in the ration, or it will be too high in fibre.

These results and experiments conducted at other stations indicate that as we learn more about feeds, we shall be able to dovetail them together so as to make more efficient rations, at least for certain classes of livestock.

Importance of Efficient Rations

In conclusion, let us consider what these discoveries of the past quarter century mean in terms of practical stock feeding.

For the farmer, these recent developments emphasize anew the importance of providing an abundance of legume hay for his stock. Well-cured alfalfa or other legume hay has all the following merits:

Legume hay is rich in protein. These proteins are of the right kind or quality to supplement the deficiencies of the cereal grains. Legume hay is also rich in calcium, the mineral constituent which, in addition to common

salt, is most apt to be lacking in usual rations. It is a good source of vitamins A and D, which are the only vitamins apt to be lacking in the rations fed to live stock.

There are, therefore, all these important reasons, in addition to the large improvement of soil fertility, for growing plenty of legume hay on every stock farm.

For the feed manufacturer, these recent discoveries are also of profound significance. The feed manufacturer can best serve the interests of his patrons only when he appreciates these new developments in nutrition and when he also fully understands the common feeding methods and practices of his patrons. Only then is he able to develop the most efficient formulae for his feeds—formulae so designed that his mixed feeds, used by his patrons in combination with the common home-grown feeds of their district, will make the most efficient rations for his patrons.



"RE CONVERSAT"

Year '28 are making extensive preparations for this year's Conversat, which is to be held on Friday night, January 28.

Burton Tilbs' eleven piece broadcasting orchestra, from Toronto, are supplying the music. A cordial invitation is extended to all ex-students. Invitations may be obtained upon application to W. A. Davidson, O. A. C.

Agricultural Conditions in Montana

November 16, 1926.

Mr. D. F. Putnam,
Live Stock Editor,
O. A. C. Review,
Guelph, Ontario.

My Dear Sir:

You have assigned me a hard task in your letter of the 5th. It was 33 years ago since I severed my association with the O. A. C. and moved 2000 miles west, into a country with, to me, many new and unfamiliar problems; a stranger who had to put across the job or quit. That was probably not different from what many young people are doing now. Your name reminds me of a man who was secretary to President Mills some 35 or 40 years ago. He later graduated from the O. A. C. and has followed up some post graduate work in conducting farmers and womens institutes. I have a son and two daughters, all graduated from college; all are married and I am five times a grandfather—see what time does to people.

I have lived out among the mountains of the west for many years. As I look from my office window the mountains are getting white capped, in fact the higher ones have been for some time. They look like a barrier on the horizon and yet peaks 40 to 50 miles away are clearly visible; these mountain tops stand out sharp and distinct.

Montana is a large state as states go, the third state in area, yet it is but three-fifths the area of Ontario and has but one-fourth the population. The University of Montana consists of four institutions in four different towns in the state. The combined student attendance in over 3000 in the four year college courses. The State College

with which I am connected has about 880 college students divided into four main groups; Engineering 377, Agriculture 127, Home Science 253, General Science 125.

In addition to the college work there is associated with this institution the Agricultural Experiment Station and the Agricultural Extension Service. For all of this work there is available for yearly maintenance from state and federal sources about as follows:

College Instruction etc.....	\$300,000
Agricultural Experiment Sta-	
tions and Branch Stations..	180,000
Agricultural Extension Service	160,000
	\$640,000

To this is added nearly another \$100,000 from student fees, sales of produce etc. In the fall of 1920 the people of the state voted bonds of \$3,500,000 for the erection of buildings for the various institutions making up the University of Montana. The amount made available to the State College was about \$1,250,000. This has provided four new buildings, remodeled one and provided a complete new heating system, so that the institution has now adequate room for carrying on its work. This will afford some contrasts with what Ontario is doing.

Montana farming problems afford some interesting contrasts. This farming country ranges from 2,000 to 6,000 feet above sea level and the length of the growing season is somewhat in proportion. The annual rainfall varies from 10 to 24 inches in different parts of the state, which gives quite a variety of land use from poor pasture to good farming possibilities. Then the mountains provide water storage at an

elevation that makes possible the irrigation of several million acres of land. There are economic problems too, as the northern location and the high altitude limits us to the staple crops, while being in the interior of the country places us a long distance from the consumer of our produce. These problems are not easy, nor are they short time problems, but they are very interesting.

I became connected with this institution 24 years ago, first as head of the Agricultural Department, and one year later as Director of the Experiment Station. Then the Agricultural Department consisted of two men, a Professor of Agriculture and an Assistant in Horticulture. The Experiment Station staff had seven men and five departments. Now the Agricultural Depart-

ment of the College has a faculty of fifteen in the various branches of Agriculture and the Experiment Station staff consists of 36 men, and in addition nine men are at four branch experiment stations. In the Agricultural Extension Service there are fourteen specialists etc., and 32 county agricultural and home demonstration agents.

The planning, shaping and working out of this enlarged organization as the years have passed, has been one of my responsibilities. The start was on that Ontario farm; the lift to a place for going forward was the years spent at the O. A. C.

Very truly yours,

F. B. LINFIELD,
Dean and Director.



The College Royal will be held on January 18th.



Are College Men Wanted?

By A. W. Armstrong

I

IF the man recently out of college or technical school is questioning, as seems to be the case, whether he wants Big Business as a lifemate, likewise is Big Business questioning whether it has done altogether well to take unto itself the college man. These questionings on both sides are more acutely to the fore during the first year or two of the union than ever afterward. If the union has not been dissolved at the end of this time, it settles down into a round of mutual adjustments that work for the fair average of content we find in the domestic ménage once the turmoil of its beginning has subsided.

As a representative of Big Business, I have often been responsible for this match. I have 'sold' the company to the young man graduating from college, university, or technical school; I have 'sold' the young man to the company. Very often I have looked back rather ruefully on my work, as a clergyman must who has performed the ceremony on an occasion whose felicitous promise is far from fulfilled. But at any rate, standing, as I did, for a number of years as a sort of a buffer between the two, the Big Business pouring into one ear its objections to the college man, and the college man pouring his grievances into the other, I have learned something of the state of mind of each. It is doubtful whether here, as in marriage, to push the analogy a step further, there is more serious or widespread maladjustment than ever existed be-

fore, but parties to unhappy unions of all sorts now seek more generally to escape them. They are more vocal.

In discussing the matter not long since with a group of junior executives in a nationally known business organization, they told me that their chief executive was so set against college men in general that when a short while before, it had seemed necessary to include a man of recent collegiate training among the advisers the president was taking with him to Europe to pass on some new project, they had deliberately selected from a number of applicants the one they thought least likely to be detected as a college man, and that only after he had won the president's confidence had they dared reveal the young man's background.

My own first serious thought on the objections Big Business raises to the college man was when the controller of the corporation with which I was connected at the time, in outlining his needs for 'able fellows,' capable of working up to large responsibilities, placed upon me the final injunction: 'But no more college men—please!'

As time went on, I heard more and more often 'No college men!' from executives looking for young men to develop in their respective fields. What they wanted, if you pinned them down, were high-school boys. And, except where men with highly specialized training are required, boys with high-school education and nothing more can, without doubt, be more comfortably absorbed into the

broad, slow-moving current of the great corporation than can men with college training—and college aspirations.

But where is Big Business to find these high-school graduates, energetic lads of first-rate intelligence, who have in them the making of future business leaders? When a lad of this sort finishes high school nowadays he goes on to college, no matter how poor his family, so much less have become the difficulties of financing a college course, what with scholarships, opportunities to work his way through in whole or in part, and the ease of negotiating a loan for the purpose. If he does go into business directly from high school, it is only for a year or two, that his earnings may help towards the coveted goal.

To cry for bright high-school boys to meet the needs of Big Business for future leaders is to crap for the moon. Whether it wants him or not—there is no alternative—Big Business must content itself with the college man; and, whether half-heartedly or no, the college man in ever-increasing numbers is destined, through the numerous and obvious opportunities it offers, to enter this form of union.

II

Why is it that they both find, as things now are, the early stages of an inevitable alliance so disappointing?

Rank has its privileges. Let Big Business speak first.

Its outstanding criticism, when the frailties of the college man have been aired by my hearing, is of his overwhelming desire to be advanced faster than his own development and the exigencies of business per-

mit. Granting that in the long run the man with collegiate training will other things being equal, have a decided advantage over the men without it, from the executive standpoint, no educational training whatever offers an acceptable substitute for a reasonable period of actual work in a business organization. A reasonable period. There's the rub! In the mind of the college man it is a matter too often of months—a year or so at most. In the executive's mind it is from two or three years to six or seven.

The college man, to be sure, has already spent four to six years of what he considers the heyday of his existence in some institution of higher learning. Some thousands of dollars have been spent to secure this training for him. He is eager to realize on what amounts to a considerable investment. He wants to get married. How often I have put to a college man impatient with his progress the question: 'You are engaged?' to be answered by an affirmative. More often than not he is in debt for his college expenses. He is harassed by notes falling due to a far greater extent than the upper executive—long past a similar struggle, if he knew it—is usually aware. I remember one fine young chap who went through two severe winters without an overcoat in his effort to pay back as rapidly as possible, out of his nominal starting salary, the man who had financed him through college. As likely as not, the recent graduate is both in debt and engaged. Moreover, he has developed tastes, entirely legitimate tastes, that call for money—golf, his Ford, his college club. His cultural side perhaps has been awakened; he

wants to hear the best music, to enjoy the theatre, books, art.

And there are executives, though so rare as hardly to count for purposes of argument, who consider such tastes aids to the young man's business progress. But the usual executive, who has taken up golf at forty or fifty, even sixty, and whose enjoyment of club life has been the reward rather than the prelude to his own business activities, does not consider that an undue hardship is imposed on the college man if he must postpone any large indulgence of his sporting or social instincts until he has, in the executive's opinion, earned a right to do so. When it comes to the college man's possible desire to enrich himself along cultural lines, if executives, generally speaking, give this matter a thought—which I doubt—it is, I imagine, that culture, from their observation of its exponents, is not, expensive, and can be afforded by anyone so minded.

Small wonder, however, that the college man, viewing all these things from a totally different angle, presses in season and out for advancement and more pay. And if only the college man of exceptional mind or personality pressed in this fashion there would be, in all probability, little protest. Big Business, with its knotty problems, at all times hungers and thirsts after exceptional ability; is by no means slow in discovering it, or niggardly in its rewards. But, so the executive complains, the college man with nothing out of the common to offer is even more impatient to advance than his more highly endowed brother. It is, indeed, the discovery that the college man of only average ability is far

more of a problem and less of an asset to Big Business than the average man of less education that has led more than one executive to the proviso: "If I must take college men, I want only the best—not necessarily men whose marks have been highest, but all-round capable fellows."

Again and again—I think I may say it is generally the case—even before an executive acquires a young man of this calibre he has in mind the berth for which he intends him eventually. If not beforehand, he soon determines on one when he sees him exhibiting promising traits. The young man may be slated for a position of real importance; he may be intended, quite unknown to himself, for Shanghai, Rio de Janeiro, or London. But the executive must keep him under observation long enough to see how he handles a variety of matters, to learn the impression he has made on others as well as himself. To confide his intentions to the young man at the start would be to run the risk of disappointing, perhaps destroying him. This seems a difficult thing for the college man to grasp—that he himself, no less than Big Business, is protected when he is not told of what is in prospect for him till the hour is ripe. Only faith will serve him at the start—faith that if he gives unusual services he will in time reap unusual reward.

It used to be my custom in visiting a college, after conferring with the dean and various professors and after examining records, to arrange to see a group of a dozen to twenty men. Following my setting forth of what the business I represented had to offer, there was always one man

who would inquire, and he seemed to express a half-uttered desire to know on the part of others: 'Now, can you tell me—not exactly, of course, but approximately—what I should be getting three or four years from now if I came with your company?'

My answer, without too serious a face, would run something like this: 'If you can tell me the quality of service you would render in the next three or four years, in the event you should enter the company I represent; if you can tell me how you would meet the various exigencies that would arise in that length of time, and the impression you would make on the persons in the organization with whom you came in contact, I can give you approximately the figures that would be opposite your name on the pay roll.'

Obvious as all this may seem, I have found the college man, even the very bright college man, slow to believe that the result of his union with Big Business so largely depends on himself.

Though the circumstances may be extenuating, none the less the college man, from my observation, does himself distinct harm during his initial period in business by keeping his gaze constantly riveted on what he is to get, rather than on what he is to give. One of the well-founded charges against college men who enter Big Business is that they flock together, form a clique; and, from what they themselves report, the all-absorbing and unending theme of their conversation—at meal time, in their rooms at night, and while they snatch smokes together during business hours—is how much this one and that is drawing, the sensational

salary reported to be paid somebody else with some other concern, and their personal prospects in regard to increase.

The colleges assert that they make every effort to induce a different attitude in the student planning to go into business, but the only answer is that thus far college teaching along this line has been largely ineffective.

Business executives, as a rule, worked long and arduously for their own advances. In their own youth it was a grave impropriety for a young man to ask for larger salary. They cling to their old view. And when they do increase a young man's pay they expect him to exhibit real appreciation. The college man, however, not only takes an advance as a matter of course, but not infrequently walks into their offices and argues that it should have been more!

The college man, almost without exception, expects to become—and shortly—an executive. I can truthfully state that not one young college man in a hundred with whom I have discussed a business future has failed to make it plain that the thing above everything else he was interested in was an executive position. His knowledge of the various functions of business might be shadowy, he might be far from clear as to the line in which he intended to direct others, but there was no uncertainty whatever in his expectation of acting as director.

However brutal the college man regards it, I believe the best bit of counsel that can be given him is to forget for his first five years in business that there is such a word in his vocabulary as 'executive.' His

(Continued on page viii)

Making a Record

By D. F. Putnam, '27

THE past twelve months have been stirring ones in Ayrshire history, and especially in Canadian Ayrshire history. The world's record for the breed has been broken three times and each time by a Canadian bred cow. Brierly Lass of Ottawa broke the record of old Nellie Osborne of Elmshade 16th early in the winter, only to be beaten again by Nellie herself with 1,003 lbs., thus becoming the first thousand-pound Ayrshire cow. But even this record did not stand long for it was surpassed in October by Betsy Wylie, with 1,103 pounds of fat from 21,805 pounds of milk, an average test of 5.6 for the entire year. She also holds the Canadian record in the four year old class, having made it in 1924, with 854 pounds of fat from 18,021 pounds of milk.

This wonderful cow is a Nova Scotian product, having been bred and raised by Mr. Samuel Crockett, of Middle Musquoboit, in whose stables she made her world-breaking record. She has mingled in her the blood of the best Ayrshire lines in the world, and she traces four times to Nellie Osborne (Imp.), the Chicago World's Fair champion. It may be mentioned in passing that Nellie Osborne of Elmshade 16th traces twice to this same cow.

This record was made under actual farm conditions and is an example of what proper care in breeding and management can accomplish, even without the aid of highly fitted and ornamental equipment. Betsy Wylie was housed the year round, except for a short period in the late summer, when

she was tethered during the day on aftermath. The ration used consisted of mixed grass hay and a plentiful supply of roots during the fall and winter season. The concentrate ration consisted entirely of Cow Chow during the first part of the lactation period. In the spring when the roots began to give out Mr. Crockett replaced them in part by a liberal addition of bran to the ration in order to supply the laxative necessary. As soon as the grass came on the succulence of the ration was supplied by fresh cut grass and clover, and later on by a soilage crop of oats, peas and vetches, which seemed to be very much relished. This system of feeding was practiced during the summer months, the cow being kept in except for daily periods of exercise; but towards fall Mr. Crockett seemed to feel that she was tired of staying inside so he tethered her on the after grass. This change helped very materially in keeping up the heavy milk flow and maintaining the cow in condition.

Betsy Wylie was milked three times per day during the entire test, her highest daily production being over 80 pounds, and her average for the year about 60, so that her production was very uniform throughout. The greatest depression occurred during the fly season, in spite of the fact that various preparations were used to repel the insects. Mr. Crockett says that in any future record making that he may attempt, he will have the stall completely screened in order to afford proper protection.

The making of such a record is some-

Continued on page xxvi.

News and Views

LUCKY THIRTEEN?

On Sept. 13th, 13 men left Mills Hall to try for a place on the stock-judging team. This team at the recent International Live Stock Exposition in Chicago stood 13th, with twenty-three teams competing.

The team took the same trip as usual, leaving on Friday, Nov. 19th, under the careful guidance of Prof. R. G. Knox, via Lansing, Mich., Lafayette, Ind., and from here on the Giant Roller Coaster to Danville, thence to Champaign, leaving finally for Chicago in time for a turkey dinner on their Thanksgiving Day.

Friday was spent in the lobby of the Chicago Theatre, but we finally reached the seats as the performance ended.

The men composing the team were A. H. O. Colbert, G. M. Hart, W. M. Hart, A. D. Runions, A. H. Stevens and N. I. Clark, spare. The European plan in vogue at the hotels met with the approval of several members of the team with Scotch tendencies.

After careful deliberation, the team decided that as no black cats crossed the road, Sept. 13th should have been on Friday.

STUDENT EXHIBITS AT THE COLLEGE ROYAL

The College Royal will be held during the latter part of January. The

experience obtained by preparing exhibits is of inestimable value to the student after graduation.

There will be classes for wheat, oats, barley, corn, small seeds, potatoes, mangels and turnips. The Agronomy Club offers awards in all classes. Students may bring material from home to exhibit, or the material may be obtained at the College. Let's go, gang! Bring the crowd to the gym. as well as the pavilion.

THE ONTARIO EXPERIMENTAL UNION

The meetings of the Ontario Experimental Union will be held on January 11th and 12th. The organization was started by the O. A. C. students in 1879, and since that time has proved very valuable in introducing new and improved methods in agriculture.

Among the subjects to be featured by prominent speakers are Farm Weed Control, Better Crop Production, Recent Agricultural Investigations, and reports by the various Committees on Co-operative Experiments.

All students should avail themselves of this splendid opportunity of keeping in touch with the very latest in agriculture.

"RE CONVERSAT"

Year' 28 are making extensive preparations for this year's Conversat, which is to be held on Friday night, January 28. Burton Tilbs' eleven piece broadcasting orchestra, from Toronto, are supplying the music. A cordial invitation is extended to all ex-students. Invitations may be obtained upon application to W. A. Davidson, O. A. C.

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EDITORIAL



Christmas Holidays

WHAT a vision of happiness is brought before our minds by the mere mention of these two words, for do they not mark the cessation of examinations, the close of another college term, and if we have spent our time aright, another step upward in the ladder of success. Unfortunately, however, are we if our vision is so clouded as to obscure to us the true significance of the holiday season, and to prevent us from grasping the true spirit of Christmas.

Every true student, by virtue of his calling, is closely allied to this Christmas

spirit, because in his search for knowledge, he is fitting himself so that he may eventually make a greater contribution to society and to the world. Any student, who has really caught the spirit of higher education, is of necessity, a potential future-giver. And it is this same spirit of giving which is symbolic of Christmas, the day on which the complex machinery of the Christian world stands still as it pays homage to the world's greatest "Gift".

The Review Staff wishes to extend to its readers throughout the universe the Heartiest Christmas Wishes.

Our Loss



Mrs. H. L. Thomas

THE marriage on Saturday, November 27th, 1926, of Miss Vera Moore to Mr. H. L. Thomas, took from our midst a very popular member of the Co-op Staff. Our loss, however, was Bert's gain.

During her stay here, Vera's pleasing personality won for her a host of friends on both sides of the campus. The fact that she could skate made her popular at the rink. Her presence at our banquets and dances always added to the cheerfulness of the crowd. The college teams could always depend upon her hearty support. And then, who could resist buying a chocolate bar, when they were greeted with a sunny smile and a cheery Hello. In short, her jolly ways, her pep, her free and easy manner made us feel that we had known her all our lives.

In addition she was always willing to lend a helping hand. Review material and Fourth Year Theses were always cheerfully typed. Her extensive knowledge of publishing houses has aided many students in securing desired text books. In short, she has been a valuable asset to the Co-op. She goes from us with the sincere wish that her life partnership be long and happy.

A full account of the wedding appears in the Alumni Section of this Review.

"Nae Man Can Tether Time or Tide"

HOW strongly the full meaning of this line is brought before us as we realize that this, the twelfth and last issue of the Review under our direction, is about ready to go to print. Just one year ago, we started out, eager for the fray, and with high ambitions, many of which have been unrealized. Today, while penning these lines, we cannot help musing over the swift passage of these twelve months, replete with problems tackled and overcome.

As a whole the year has been a very pleasant one. Truthfulness, however, demands that we admit that the publishing of the Review during the summer months was, to say the least, very disheartening at times. Few perhaps realize that articles contained in the summer issues, had almost invariably travelled four thousand miles, in four distinct stages, by rail, before finally appearing in the printed column. This, of course, added considerably to our difficulties,

and yet, in spite of these difficulties, and the problems involved, the time passed quickly, and soon our burdens were lightened by our return to the congenial atmosphere of College Heights.

The memories of those summer months, however, makes us wonder if it is fair to ask any student to edit the Review during the summer holidays. Now we may be all astray in our theories, but we at least have a right to and, as it happens, an opportunity to express our opinions on the subject. And so in spite of the unjust criticism which this is sure to evoke because the Review is deviating slightly from its traditional attitude and procedure, we are proposing, as a parting suggestion, that the June, July and August issues be henceforth cancelled.

Before handing over the reins to another, we should like to express our appreciation of the splendid spirit of co-operation which has been manifest between the staff and the students. Everywhere we have met with a hearty re-

sponse, and it is this spirit of "get togetherness" which has made it possible to maintain the Review on its present footing.

Nor do we wish to forget our non-student contributors—members of the Faculty, graduates, and others, with neither past nor present direct association with the college. All have willingly contributed their quota to our magazine, and to these, we are especially indebted. It is only through their co-operation that the publishing of an issue with such an array of articles as this, is possible.

For the next twelve months, the task of publication falls on the present associate-editor, Mr. H. G. Tillman. We ask for him the same spirit of thoughtful co-operation that you have bestowed upon his predecessor. This spirit together with that attitude of non-fault finding which has been exhibited during the past year lightens the work of the editor, and makes for the highest success of a college publication.

The Library

AS I write I have beside me on my desk, a book on literary criticism which I have thoroughly enjoyed. I drew it out of the library quite casually two days ago. The excellence of its subject matter so intrigued me that after I had devoured its last page I became interested in the book itself as an entity; its immaculate green and white freshness, its glistening gold lettering, its firm, compact, straight edged newness held my passing fancy. Admiringly I turned it over in my hands. "A recent edition", I thought, "let me see the date of publication". I flipped back the front cover to scan the library bookplate, that little white pasted strip, Shelf No. (then those weird heiroglyphics) across the top, the old coat of arms of

the college (Oh that symbolical plan) on its face, the date line in the lower corner. What! 1911? Impossible! I flung open the back cover to read the record of withdrawals; one date only was stamped on the record slip, right at the very top, my own withdrawal entry, December 4th, 1926.

For fifteen years the book had kept its place among its fellows before anyone had found it meet to be the companion of a leisure hour, before anyone had ventured to carry it across the campus to spend the week end on their study table; a decade and a half.

It set me thinking.

Much had happened in the college and in the wider world since that volume, like a blushing debutante, first took its

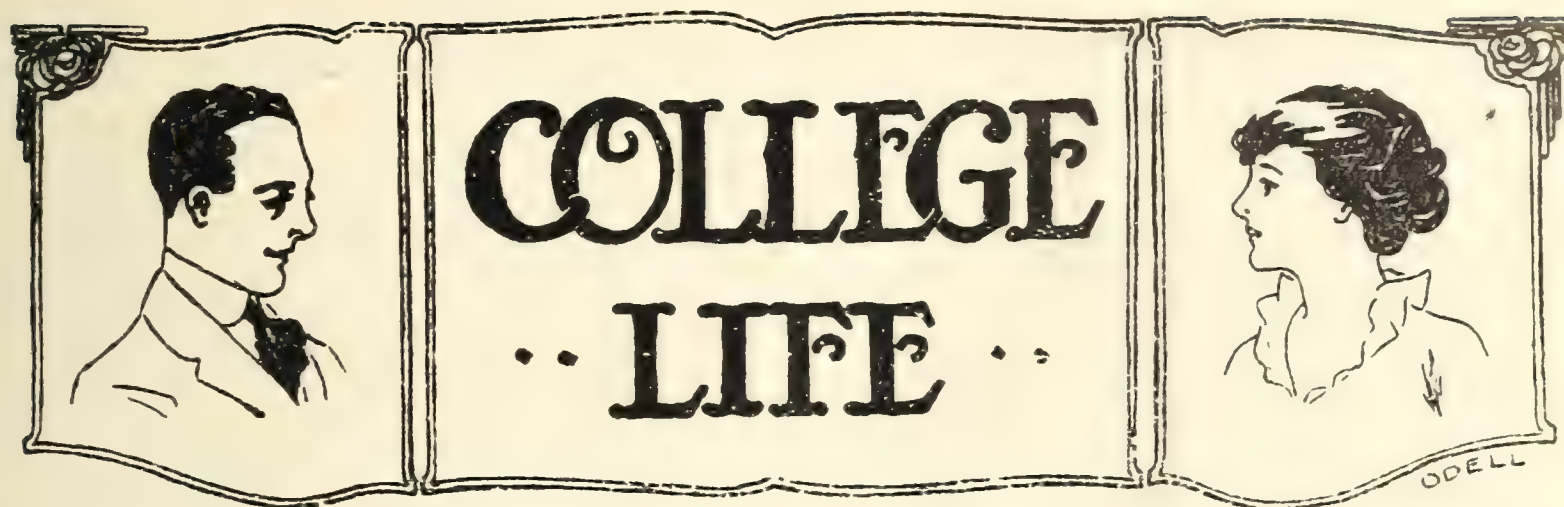
honored place among the ranks of its honored companions. To-day two splendid specimens of Blue Spruce trees flank the entrance to the President's office. I doubt whether their planting had been decided upon in the year nineteen eleven. Certainly there was no Dairy or Veterinary Building in existence at that time, no splendid Physics Building, no classic Dining Hall, no Rink, no Apiculture Building. The Field Husbandry Department managed somehow in the basement of the Agricultural Building. The sites of the Memorial Chapel and Mills Hall were a thick grove of evergreens. Yet all these slow growing wonders have been evolved while my little virgin volume stood patiently upon the shelves awaiting her first love. The din of sixteen flagfights had echoed thru the library, drawing stray readers to the windows, since first she came. Think of the changing personnel of student body, of faculty, in fifteen years. Perhaps once, let us say in 1916, my little book got quite a thrill when some questing, inquisitive finger drew her reluctantly, like a shy little dancing partner, from her place; then when disinterested hands, casually thrust her back, rejected her—

I remember my first afternoon as a freshman at the college, more days syne than yesterday. I spent the pleasant sunny hours exploring. The barns of course came first. My recollections of that afternoon include the impression I got of how dignified gray stone walls could be, of a wonderful roan bull calf, that made me break the tenth commandment on the spot, of the beauty of the weeping birch trees on the campus. Towards the tail end of that afternoon I remembered that there should be a library somewhere and I sought it out. I remember locating it and hesitating on

the landing outside its swinging doors. I was hoping that my college would not disappoint me in this particular and yet I believe I expected nothing more than a table or two, some shelves, stacks of books, all cheap editions. Then I swung back the doors—and stood entranced. "This," I said, "is the most satisfactory room of its kind in the world". I have never had reason to modify that opinion. My first thought was that the library was too good, too elaborate, for even the O. A. C., just for a moment. Then I remembered that nothing was too good for my adopted college. And yet when I think sometimes of those priceless volumes waiting untouched for years upon its shelves—I wonder.

It is good to know the Library. Some day the present undergraduate will return as an old boy to spend a day at his old college. Given the passing of a few years from his graduation and he will discover that there is something even worse than being a stranger in a strange land, a stranger in a familiar one. He will find surprisingly young and irresponsible looking youths strutting the old familiar corridors. A kid with weird ideas of unusual art will be esconced in his old room. Wherever he goes he will be stared at. He will accost members of the faculty on the campus and they greet him cheerfully and say, "Oh yes, I remember you quite well. You are—now the name has slipped me for the moment," and on the name being supplied they will add, "Oh yes! Oh yes! I recall you of course. You were with year-, naming the wrong year. "How are you getting along!"

If you are wise you will then climb the steps of the old Library and feel at home again— for an hour or two, but if you do not know your Library you will have no place to go. C. C. '27.



4th Year vs. 1st Year. Final Debate

The final "Inter-Year Debate" was staged in Memorial Hall, the evening of December 3rd. The affirmative of the debate "Resolved that the Senate of the Dominion of Canada should be Abolished", was upheld by L. B. Pett and A. G. Loveless of Year '30, while J. E. Blaney and G. G. Buston of '27 advanced the points for the negative. The manner of all four speakers was very pleasing, especially that of Mr. Pett, first speaker for the affirmative. Ven. Archdeacon G. F. Scovil of Guelph, in giving the decision of the judges, stated that the judges unanimously agreed that the negative had presented better material in a more argumentative manner than the affirmative and that they had won the debate quite decisively. This debate concluded the inter-year series and that win by the Senior Year, gave them the championship of the series.

"Saturday Morning at the Reps. Office", a playlet composed and put on by D. Andrews and his fourth year characters was nothing if not novel. Special mention must be made of Joe Grisdale, the Rep., "who did himself proud". He was a little disconcerted at times by the very appealing, easy manner of his pretty stenographer, to whom he was dictating. The whole caste were very popular with the audience, and the work of Mr. Andrew was everywhere lauded.

The college orchestra filled in the gaps very pleasingly and their numbers always received hearty applause. "A Musical at Home", arranged by the Philharmonic Society was rather an innovation. Jack Johnson's burlesque of a very serious part, sent the audience to the roof and relieved the tension set up by the preceding numbers. The most successful "Lit Meeting", to date closed with "God Save the King".

2ND YEAR VS. 1ST YEAR DEBATE

Armistice Day Inter-Year Debate "Resolved that co-operation has done more good for the world than competition" was quite in keeping with the day. Vice President Byron S Hill, who occupied the chair, referred to co-operation and competition in the world war, and brought out in his own inimitable way some of the significance of Armistice Day. Selections from the college orchestra and piano solos by Miss Edna Lawrence preceded the debate and made a very pleasing introduction to it.

The affirmative of the debate was upheld by year '30, the negative by '29. Although the value of material presented by either side was quite close, the very fluent, pleasing manner won the debate for J. S. Hamill and J. N. Hume of the affirmative. The defeat came as a surprise to the Sophomore year, but Mr. McLean in giving the judges' decision called upon the audience for a vote

on the question, and was glad to be able to agree with the decision of the majority—that the affirmative had won the debate. This win for the freshmen meant that they would now prepare to meet fourth year in the finals. Butler and Duckworth debated for '29.

A clarinet solo by G. M. Mackey fol-

lowed the debate, 'The Oriental Scene, "Kismet", arranged by Edward Wilkes followed and his splendid caste of College actors thrilled the large audience. The scene was a little far-fetched, but nevertheless, very well received. The singing of the National Anthem closed the meeting.

The Senior Banquet and Dance

The Senior Year Banquet held in the college dining hall on November 9th thoroughly fulfilled its twofold function of providing one of those old get together parties and also demonstrating to our friends across the way that there is chicken fattening science as well as domestic science. The degree of efficiency to which the boys of the practical options have developed the former science can best be judged by those who saw the smile on the face of Professor Graham, the toastmaster. We figure that he can judge a well fattened chick-

en in more ways than one.

Toasts were tendered to the King, Our Alma Mater, Year '27 and the Ladies. The speakers of the evening were Mr. George Raithby, honorary president, Mr. Snyder, Frank Morwick, Eric Blaney, Tiny Goring and Dave Andrews.

The evening so well begun was fully as well ended by a dance in the gymnasium. The members of year '27 realized too soon that one of the major functions of their last year had passed into the book of memory.

Sophomore Dinner Dance

Monday, November 22nd, was a day when the Sophomores went wool gathering. And why not? How could they pay attention in lectures when their first important social function as a year was to take place that evening?

At a quarter to seven they assembled in the cafeteria where an excellent dinner was served. At the head table were Professor W. J. Squirrell, Mr. and Mrs. G. E. Raithby and President and Mrs. Reynolds.

Following dinner was a short snappy programme of toasts. Mr. G. E. Raithby was a popular toastmaster. Mr.

W. M. Gordon sang a heartily encored Scotch song.

After the banquet proper, Waldon's orchestra furnished music for dancing, a number of novelty dances kept things a number of novelty dances keeping things quite lively. For those who did not dance a block of seats was reserved at the theatre.

All in all it was really a homelike party. Everybody enjoyed themselves; even those who, as Miss Robertson put it, "Doubted that the dinner could be a success without the presence of the ladies."

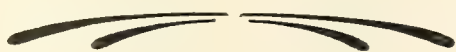
The Junior Dinner and Dance

On the evening of Tuesday, November thirtieth, year '28 answered to the old call of "everybody out" and few there were to whom the delights of the Junior banquet were not sufficiently enticing to lure them from their books for "one more night". Everybody proceeded to the other side of the campus and taking the "nicest girl in Mac Hall" on his arm repaired to the O. A. C. cafeteria, where a delicious dinner was served amid all the festivities that accompany a year banquet.

After every appetite was satisfied the chairs were pushed back and the company drank the usual toasts to the King, the Ladies and the Year. Bill Watson who so ably guided '28 through the Sophomore year acted as toast master, and his spicy comments did much to en-

liven the party. R. C. Banbury ably proposed the toast to the ladies which was responded to by Miss Maunders. Owing to the absence of Prof. Blackwood, the Honourary President, the toast to the year was proposed by Mr. E. C. MacLean and was responded to by President McCague. All speakers dwelt on their subjects in a particularly happy vein and their interesting remarks, kept the company in high spirits to the end.

The members of the year then escorted their ladies to the Gym where an especially attractive dance program was rendered by the Ambassador Orchestra. The evening passed all together too quickly and when the strains of the last waltz had died away everybody was convinced that the party had been the best of the season.



The College Royal will be held on January 18th.





SOCCER

O. A. C. 1; S. P. S. 0

The first game of the Interfaculty series was played on Saturday, November 27th, and since O.A.C. had drawn a bye in the first rounds it was a semi-final. School of Practical Science provided the opposition and while they played a good game, they were no match for the College, who should have run up a bigger lead. The Science team's goalie was in great form, and seemed able to handle everything, even to the strong drives that Pritchert was sending at him. The half line gave the School forwards a harrassing time, and by making them use long passes gave the backs plenty of time to clear. In spite of the strong wind the College forwards played a nice passing game and were rewarded by the only goal of the day.

S. P. S. Eliminated

By defeating S. P. S. three goals to nil on the return game in Guelph and thus winning the round 4 to 0, the College team advanced to the finals. They were undoubtedly the better team, for on the few occasions that the Science men were within scoring distance, their shots were easy for Mike Chepesink. Every man on the O.A.C. squad played good football, though the work of their full backs was outstanding.

Play was quite even at first, but the College slowly but surely wore down their opponents, and after the first

fifteen minutes play was chiefly in the S. P. S. end of the field. Tommy Betts scored the first one on a single effort when he fooled the "School's" backs and then sent a hard one into the upper corner. Brother Fred slipped in number two, and Tommy Brank got the third one on a nice pass from Bob Thompson.

O. A. C. 0; Wycliffe 0

The final of the Interfaculty Soccer series was played off in Toronto on Thursday, Dec. 2nd, and on a very tricky field O.A.C. held Wycliffe College for two hours to a no score tie.

The O. A. C. defense were well on the job and made things so interesting for the Toronto men that only on three or four occasions were they really dangerous, and then "Mike" Chepesink, the College goalie, handled their shots with comparative ease.

Acquainted at half-time with the fact that the game was "sudden death" for the championship, the Aggies woke up and rained in distance shots on the Wycliffe custodian, but they were unlucky and the state of the frozen ground made accurate passing impossible, and the fact that the O. A. C. even held their opponents in their own "half" speaks well for the doggedness with which they went about their job.

Thirty minutes overtime failed to break the tie and altho' every one was on his toes the captains finally de-

cided that the replay should be held in Guelph.

O. A. C. Interfaculty Soccer Champs.

"Dad" Harrison was as happy on December 6th as if Santa Claus had paid him an early visit, and well he might be, for not only had the soccer team defeated Wycliffe and won the Interfaculty title, but no longer did "Dad" have to crawl out at 6.30 a.m. and get "his boys" out to practice.

There was no doubt of the better team on the day's play, and O. A. C. fully deserved their 4 to 1 win. The field was covered with a foot or more of snow, and while the land roller was pressed into service to make play possible, the footing was treacherous, and the control of the ball very difficult. Even at that it is doubtful if there has ever been such a fine display of team work on the campus in an Interfaculty fixture as was shown by the winners. They had their opponents dizzy with their short, accurate passes that carried them right in on the goal. Their defence play was also nothing short of brilliant, and it was very seldom that the ball got past Thompson and Smith. In fact Mike Chepesink didn't get a chance to touch the ball in the first period. He did get a few hard ones to handle in the second half, but he made them look easy. Wycliffe's only score came from a scramble in front of the goal and he didn't have a chance to save. Pritchert, McCague and Tommy Betts, the half backs, gave their forwards splendid support. As for the forwards—well, to mention them all would be to mention those who were good. Perhaps outstanding was the combination of the right wing, with the centering and corner kicks of McLeod featuring.

How Wycliffe held them scoreless

for two hours in Toronto is a mystery, for it took less than a minute for Tommy Brank to fathom their defence and give Webster the pass for the first goal. Score number two came just before half time when Brank got a rebound from a shot by F. Betts and gave the goalie no chance to save. McLeod centred the ball and F. Betts shot the third goal just after Wycliffe got their one and only early in the last period. The last count, though by no means the last one threatened, came from a perfect centre by McLeod, which Brank headed to Betts, who easily scored.

Prof. Blackwood's coaching was a big factor in the team's excellent showing, and he has every reason to be proud of his accomplishment of making a championship team, when he had but three of last year's men as a nucleus. (Reports are that Prof. was in the same condition as Dad on the night of the 6th!)

The champs lined up:

Goal—Mike Chepesink.

Full Backs—Bob Thompson, Bob Smith.

Half Backs—Geo. McCague, Tommy Betts, Geo. Pritchert.

Forwards — Mac. MacLeod, Fred. Betts, Tommy Brank, Bruce Foster, "Pat" Webster, Albert Barr, Joe McKean.

Basketball

With two Intermediate Inter-collegiate titles under their belt, the basketball team were not going to be caught napping and started in to practice way back near the end of October. "Shorty" McEwen and Louis Schenck certainly left two big holes in the lineup when they got their degrees last spring, but Prof. Baker has four freshmen out who are going to make a big

attempt to equalize the loss. In all there are ten men who have shown up best in practice, and from whom the team will probably be picked! They are:

“Rid” Ridley—Captain, and of course a sure regular. Anyone who has followed the College team in the last few years know what an all round player and deadly shot “Rid” is, and he is going better than ever this year.

“Tommy” Thompson—As a basketball player George is just as good as he is a gridder. You should have seen the games he played against Hamilton and Niagara Falls!

Louis Young—Thompson’s sidekick on defence last year is playing his usual steady game again this year—not flashy, but always “there.”

“Pete” Potter—Is the man who has shown the improvement. Pete couldn’t get going right last year, but he can’t keep them out now.

“Cowboy” Currey—Last year at centre with the seconds, has come along fast, and is working hard for Shorty’s old job.

Dick Graham—Who subbed on the defence last season, has shown up well and will be a valuable man again.

The freshmen are: Don Hower and George Hull, for the last two years with the Guelph Collegiate team, who were finalists in the W. O. S. S. A. Hower and Currey are having a great fight for the centre position, while Hull looks good on defence.

“Ozzie” Batszold hails from Hamil-

ton Tech. and has been showing good form on the forward line.

“Peggy” O’Neill got his basketball training in Windsor and his playing shows it. He is a pretty shot and plays nice combination.

Little can be said of the second team prospects yet, as there are so many out that there are still no indication of who will be the regulars. It is, however, expected that the team will be much stronger than last year. In an exhibition game with the Niagara Falls Ugoigo Club they showed up well and won 21-19.

The first team have played two exhibition games on their home floor.

The season was opened on Saturday, November 27th, when they held the strong Hamilton Y Seniors to a 25 to 20 score in five minutes overtime. Ridley played his usual good game, and Hower showed great basket getting ability. The four defence men were all used and all appeared quite strong, though Thompson was best. Batszold and O’Neill looked good on the forward line, though O’Neill was not on long. Pete Potter was out of town and Currey was unable to play, as he had a wrenched ankle.

The following Saturday they had little trouble in defeating the Niagara Falls Intermediates 38-24, and showed much better team work than against Hamilton. Currey and Potter both got into this game and showed just what a hard job Prof. Baker is going to have to pick the five best men.





A Christmas Wish

A lot of joy, a heap of health,
 A happy heart, a bit of wealth,
 All this on Christmas Day for you,
 And with it, Happy New Year, too.

Household Economics as a Career

The past twenty years have seen many drastic changes in the attitude of society towards women and their work, especially that done outside the home. Their increasing opportunities and responsibilities have necessitated a higher standard and broader scope of mental training, and the fact that they are taking up their new tasks seriously is shown by the increasingly large number of women graduating from schools, colleges and universities where they have specialized in the arts and sciences relating to their prospective careers. Due to this earnestness of purpose and better training, women are gradually gaining the privilege of filling almost any position they desire, and are proving themselves capable of adapting themselves to the new demands which commercial and industrial life make of them.

Of course, this means that they have not the time to devote to work in the home which was formerly the case. However, due to modern conveniences,

and the knowledge and skill acquired by the up-to-date housekeeper through education in Household Science, magazine articles and advertising propaganda, old methods have changed, and now the amount of time and labour required for housework is not half what it used to be. Another factor which plays an important part in this change is the manufacture, on a large scale, of staple articles such as bread, -clothing, cereals, etc., which were formerly made in the home. Also laundry, dry-cleaning, sewing and many other old household duties are, to a large extent, now performed by commercial concerns, thus leaving much free time on the hands of the woman in the home. It is only natural, therefore, that they should take advantage of the freedom which they gained during the war, and turn their attention to matters outside the home.

As a matter of course, they at once bring into prominence the profession and science in which they have been most

keenly interested ever since civilization began, namely that of Household Economics. This is deservedly important as around it centres the health and happiness of the home, and upon this the strength of the nation depends. This Science of the Household deals with the feeding, clothing and shelter of the individual and his social relationship within the home and within the community. On account of the breadth of its scope it is not surprising to find Household Science workers employed in many different branches of modern social and economical life, as well as in the home.

The position of Household Science teacher is, perhaps, the best known and in many cases is thought to be the only one open to college graduates in that profession. It is, indeed, an important one and much good work is being done in Public and High Schools where the fundamental principles of cookery, nutrition, dietetics, sewing, laundry, marketing, home decorating and, sometimes, even budgeting are taught to girls who probably will have no other opportunity of learning them. More advanced work is dealt with in colleges and universities where research investigations and more detailed and careful study is required. In addition to teaching in regular schools there is extension teaching in Household science as well as in other subjects. This is carried on under the direction of the Department of Education, the Department of Agriculture and certain organizations such as the Y. W. C. A., Girl Guides and C. G. I. T. The work consists of classes in night schools, summer or winter schools or other short courses, and even lectures for correspondence schools and over the radio. Extension teaching is increasing in importance rapidly as it helps business girls and women and others who have not the

time or the chance of learning homemaking in any other way.

The work of the Women's Institutes may be included under the last heading. These organizations send experienced demonstrators on visits to small towns, villages and out-lying districts where they give much useful information regarding household management and, in general, try to raise the standard of living within the home.

After teaching, comes work in the institutional field. This includes the duties performed by dietitians and managers of sanitariums, hospitals, orphan asylums and similar institutions. The dietitian is chiefly concerned with the food and nutrition problems in hospitals, hotels, tea rooms, large factories, college and other similar large dining halls, railway and steamship lines and insurance offices. Matrons, superintendents, or institutional managers and housekeepers in any of the above-mentioned concerns are better qualified for their positions if they too, have a thorough grounding in Household Economics.

In social service work Household Science graduates are much in demand as nutrition experts in fresh-air camps, public health bureaus, special schools, play grounds and day nurseries where they plan adequate and balanced diets for the children. In addition they visit many of the poorer homes in large cities and show the housekeepers how to plan suitable meals for the family in the most healthful and economical way. In this regard their work closely resembles that done by the Public Health nurse in bettering the living conditions in poorer districts.

Recently dietitians and food and nutrition experts have been sent to Labrador in connection with the Grenfell Missions. There, accompanied by a doctor and dentist, they visit the homes of the

natives and advise them on health and sanitation questions. The dietitian shows them what goods they need most and how to prepare these in a simple and attractive way.

In business there are almost unlimited openings for the ambitious graduate in Home Economics. She may manage tea-rooms and cafeterias. She may act as Superintendent of the Home Service Department of a manufacturing concern, where she has the opportunity of teaching many useful facts about food, clothing and home management in general. She may be a professional shopper who actually does the buying for out-of-town customers, or who advises undecided or inexperienced shoppers as to what would best fill their needs. Such a position demands good judgment and reliability as much responsibility is placed on the shoulders of the co-operative buyer. She may be employed as a nutrition and health advisor in a life insurance company or medical clinic, as a buyer in a wholesale food or clothing concern, as a interior decorating or home-planning expert, as a household budget authority in a bank, as a supervisor of balanced diets in a school lunch room, food shop or cafeteria, or in numerous other positions of a similar nature.

As commercial demonstrators who either go from town to town, or else have permanent headquarters in a large town or city, women trained in Household Economics are finding much interesting work to be done. These demonstrators are usually in the employ of a large manufacturing or distributing concern and are intended to gain publicity for its products. However, in most cases, they do very little actual advertising but simply give lessons on food preparation, laundry, cleaning or other household duties, merely using the ar-

ticle to be advertised in the course of their work.

In food and health research much very valuable work is being done by household science students. This work is carried on in colleges and departments in universities devoted to intensive study along those lines, and also in the testing departments of many food manufacturing concerns. This branch promises many splendid opportunities because, as a science Household Economics is becoming recognized as of primary importance.

Last, but certainly not least, of the positions open to women in this line of work is that of journalist. In this capacity she will find ample opportunity for exhibiting her literary ability in writing articles relating to nutrition, health and the home for daily papers and women's magazines, as well as in editing the Home Economics departments in such publications. The government, public health bureaus, the household economics departments of universities, insurance companies and commercial enterprises such as fruit-growers associations, all issue bulletins and pamphlets which come within the scope of the Household Science authority. If she be at all artistic in temperament she will find very congenial employment in publicity work, for clever and original advertisements, as well as instructive and practical ones, are as much in demand in this field as in any other.

Surely every woman desiring a career should be able to find a position suited to her talents and temperament in some branch of Home Economics. The infinite variety and the splendid chances for advancement it offers should appeal to her. In addition, the preliminary training necessary is of such a practical nature that it is of inestimable value to

every woman who receives it, whether she uses it in a public position or in a private one in her own home.

Household Science work is becoming more and more important as far-seeing men and women see the profit to the

nation of better education in home-making. Its future is assured. There fore it is up to the vocation seeking girl to see her opportunities in that field and grasp them.

Odds and Ends

THE KITCHEN LIBRARY

Of all precious books that our household possesses—

And, frankly, we've many of which I am proud—

There's one little volume whose wisdom impresses

Me most, and whose praises I utter aloud.

The dictum of savants whose keen erudition

Was gleaned in an ancient Athenian grove

Must bow to this tome with a practical mission—

The old fam'ly cookbook that hangs near the stove.

The chapter on Puddings, the section on Strudels,

The pages marked Muffins and Stuffin's are fine,

While Icings and Spicings, Spaghettis and Noodles

And Biscuits and Briskets of Beef are divine.

The theme's somewhat hackneyed, the writing is hasty,

The plot that the author so carelessly wove

Is scarcely original—oh, but it's tasty—

The old fam'ly cookbook that hangs near the stove.

The old fam'ly cookbook is spattered and battered,

It's dog-eared and dirty, it's yellow with age;

Some pages are missing, the binding is tattered,

But still it reigns on as our nutritive sage.

Alone in the kitchen, sans flurry or flourish,

Through three generations it patiently strove

Our palates to pamper, our bodies to nourish—

The old fam'ly cookbook that hangs near the stove.

Arthur L. Lippmann

Saturday Evening Post, Nov. 27, 1926.

Women are truly coming to the fore—Last year the Mac girls merely assisted in the Art Exhibit at the College Royal. This year they are working on an exhibit of their own. Just watch the evidence of further progress when we stage our display on the eighteenth of January. This needs your co-operation girls—let's have it.

We have lately received news of a very interesting party which took place in New York on Friday, November the nineteenth, when Miss Vera Walker entertained all the Mac '26 girls who are taking their pupil work in that city. Those present were Laura Bethune, Alice Martin, Laura Pepper, Florence Thompson, Olga Carmichael, Dora Dies, Francis Hucks, Jean Taber, Florence Partridge, Doris Hember, Helen Murison, Jean Walker, Paddy Pettigrew and Vera Walker, fourteen in all. The

girls report a very jolly reunion with "wonderful eats, heaps of talk and many tender thoughts about dear, old 'Mac'."

On Friday, November 26th, while attending a conference of Junior Women's Institutes of county at the College, Miss Ethel M. Chapman, assistant superintendent of Women's Institute, and Miss Esther Slieter, Mac. '22, who is an extension worker in the same organization, addressed the senior classes regarding their own particular branch of Household Economics.

Miss Slieter gave a most interesting and entertaining account of a trip to Manitoulin Island, which she took last April on Institute work. Her very humorous description of the many and varied difficulties which beset her, both during the trip across the island, the loss of her equipment and supplies, and her subsequent impromptu demonstrations with hastily improvised materials, gave one an idea of the splendid work being done by the Institute workers under very adverse conditions. The great possibilities in the line of rural and home demonstrations in the Department of Home Economics and the need for such work was made very evident by Miss Slieter's talk.

Miss Chapman's address was of a more serious nature. She dealt with the qualifications necessary for girls entering the field of Extension work in Women's Institutes. To state them briefly the qualities she stressed were as follows:

1. Technical knowledge and skill in Household Science of a definite and practical nature.

2. The power of adapting oneself and one's work to varying conditions.

3. Appreciation and understanding of life in the country.

4. A fondness and sympathy for people in general.

5. The ability to appreciate the value of the work done by the humblest of men and women regardless of their poverty or lack of social importance.

6. Leadership.

7. A workable knowledge of recreation work.

Miss Chapman is very anxious to see specially trained women settled in every county to do Home Demonstration work and in this way to improve conditions of life in rural communities.

The girls of Mac. Hall wish to thank the men who so valiantly came to their rescue when their slumber was so violently disturbed by threatened invasion in the wee sma' hours. They regret that the sincerity of their appeal for aid was doubted by some rather skeptical individuals. In consideration of the more chivalrous members of the College across the campus, they are glad to report no further danger from intrusion, as screened windows and padlocked doors will surely prove a sufficient barricade against outside forces. This news will, no doubt, ease the minds of our pro-

tectors and do away with the need of any anxiety on our behalf.

The Macdonald Hall basket ball team played its first game on Saturday, November 27th, when they met the girl's team from the Guelph Collegiate.

The Mac. Hall line-up consisted of:

Ruth Kirkpatrick, Dot Sisson, Jean Rowat, forwards; Inez Graham, Agnes McKague, guards; Evie Harris, centre; Mollie Gordon, sub.

Miss Higgins, of the Guelph Colle-

giate, acted very capably as referee.

Throughout the whole game the Macites had the better of the play, in their swiftness, combination and shooting, with the resulting score in their favor of 35-5. This initial game gives promise of a successful basket ball season in our league with Toronto.

Come out and give them your support.

Year '26

Miss Florence Partridge is taking her pupil work at Fifth Avenue Hospital, New York.

Miss Paddy Pettigrew is filling the position of dietitian in Jamaica Hospital, New York.

Miss Mollie Gordon, who has been taking a short course in demonstrations at Macdonald Institute, is beginning her work as a Woman's Institute worker the first of January. Her first demonstrations are to be given in North Simcoe and Perth counties.

Miss Frieda Wallis is taking her pupil work at Victoria Hospital, London.

Miss Eleanor Sawyer is teaching Household Science at Niagara.

Miss Reba Rice is taking her pupil work at the Massachusetts General Hospital, Boston.

Miss Helen Simpson is editor of the Social and Personal Column of the Sarnia Canadian Observer.

The Misses Violet Young, Irene Brick and Mary Watts are taking their pupil work in Rochester.

Miss Alice Martin began her pupil work at Bellevue Hospital, New York, on the first of November.

Miss Agnes Roe is teaching Household Science in Vancouver, B.C.

Miss Helen Horne is taking her pupil work in the Boston City Hospital, Boston, Mass.

Mrs. Mary E. Child has succeeded Miss Peudy in the Bread Testing division of the Chemistry Department, O. A. C.

The Misses Edna Post and Mabel Clapp are taking their pupil work in the Sick Children's Hospital, Toronto.

Miss Dora Dies is assistant dietitian in Cumberland Hospital, Brooklyn, N.Y.

Miss Edythe Card is taking her pupil work in the Guelph General Hospital.

Miss Hope Johnston is teaching Household Science in Port Hood, Nova Scotia.

Miss Marion Kennedy is taking her pupil work in a private hospital in Toronto.

Miss Dorothy McFeeters is taking her pupil work in Western Hospital, Toronto.

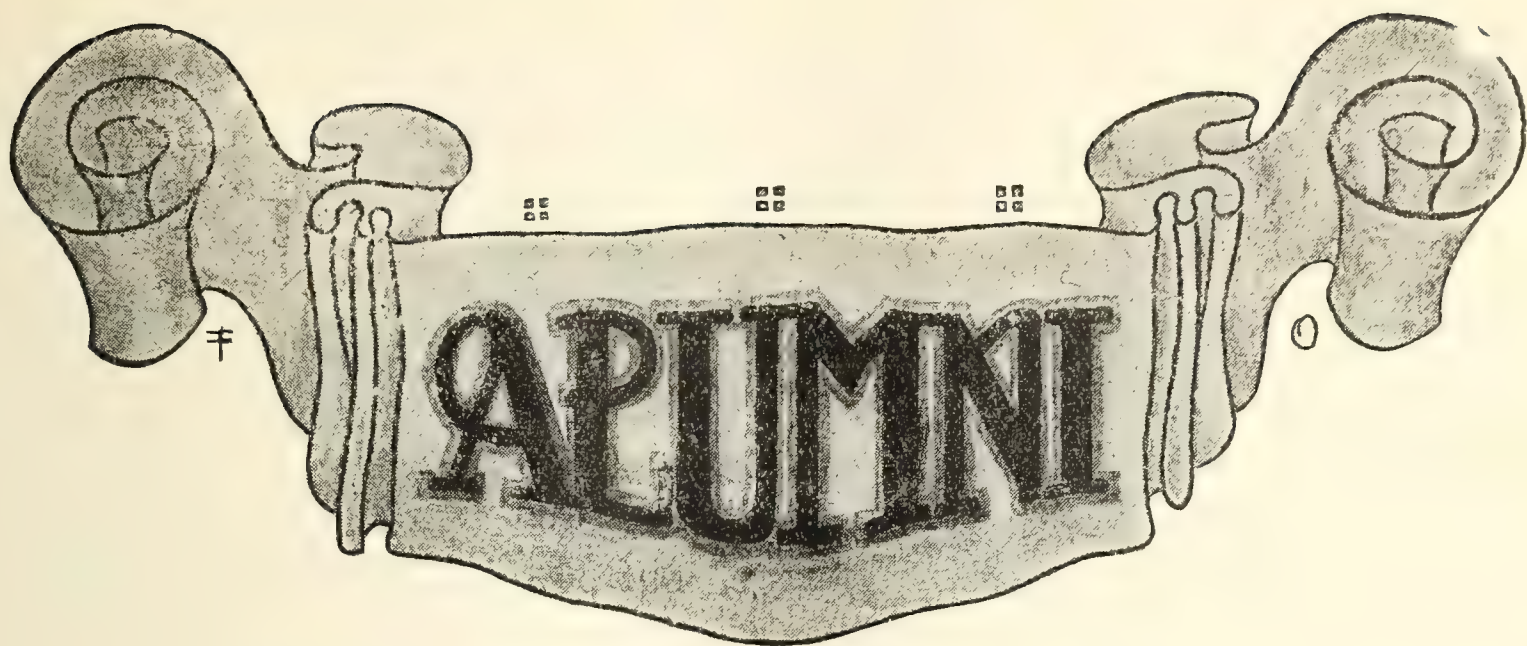
Miss Marion Seldon is teaching in British Columbia.

Mr. and Mrs. William W. Prout announces the marriage of their daughter, Viola Grace Atkin, to Mr. Harold D. Robertson, on Tuesday, November the second, Nineteen Hundred and Twenty-six, Guelph, Ontario. At Home after December the first, 52 Lake Shore Boulevard, Toronto.

Miss Grizzel Hart is now teaching Household Science in Toronto.

Mrs. Herb. Alp (Billie Odell, Mac. '25), is now living just outside Chicago, where Mr. Alp, O.A.C., '22, is head of Poultry Extension at the University of Illinois.

Born—To Mr. and Mrs. Nelles Rutherford, on October 6th, a son. Mrs. Rutherford was formerly Marjorie Harris, Mac. '24.



BIRTH

Felker—Born, on Thursday, November 18th, at Collingwood, to S. R. and Mrs. Felker, a son, Donald Stewart.

Stewart Felker was a member of year '24.

We are pleased to report the following marriage, and extend hearty congratulations:

THOMAS-MOORE

St. George's Church, Guelph, was the scene of a very pretty wedding at three o'clock on the afternoon of November 27th, when Vera Reynolds, eldest daughter of Mr. and Mrs. Charles T. Moore, College Heights, was united in marriage to Mr. Herbert Lancely Thomas, B.S.A., son of Mr. and Mrs. J. W. Thomas, of Strathroy. The altar and chancel were effectively decorated with chrysanthemums and ferns, and Venerable Archdeacon Scovil performed the ceremony in the presence of about thirty-five guests. The bride entered the church on the arm of her father, and was a dainty picture in a bouffant dress of gold taffeta, gold lace hat with touches of pastel green, gold shoes and stockings and carrying an old-fashioned nosegay of sweetheart roses and lillies of the valley. Her bridesmaid, Miss

Flora Moore, wore a frock of shell pink georgette, silver shoes and stockings, large hat and carried an arm bouquet of pink roses. The groom was supported by Mr. Irwin Carrothers, of Strathroy, and the ushers were Mr. Charles Moore and Mr. Floyd Thomas. During the signing of the register Miss Claire Little sang very beautifully "Until." Following the ceremony a reception was held at the home of the bride's parents, Dean Ave. Mrs. Moore, who received with the bride and groom, wore a dress of black satin, hat of French blue velvet and corsage bouquet of pink baby 'mums. Mrs. Thomas was in rose crepe, with large black hat. Later Mr. and Mrs. Thomas left for Eastern points, the bride wearing a dress of beige crepe, seal coat and small blue hat. They will, on their return, take up their residence in Belleville, where Mr. Thomas is the popular science master of the Belleville Collegiate Institute.

O. A. C. ALUMNI AND C. S. T. A. BANQUET

On Monday evening, Nov. 15th, at 7 p.m., in the King Edward Hotel, Toronto, about 150 Old Boys sat down to enjoy the banquet put on jointly by the O. A. C. Alumni Association and the C. S. T. A.

From 6 to 7 o'clock the upstairs hall rang with the merry laughter and hearty greetings of old pals, who in some instances had not seen each other for many years. Under these circumstances the usual hour for eating was passed and the appetite whetted to more fully enjoy and do justice to the chicken supper.

Dr. Creelman gave a very carefully worded and emphasized grace, which appeared to meet in every detail the anticipation of those present. As the supper proceeded hunger subsided and the joyous instincts rose until, at the conclusion of the toast to the King, Luke Pearsal stood upon his chair and quoted Rusty Rogers as saying that "I want to make a noise. Let's holler." At this signal old Allerebo fairly rocked the glass dome of the hall. Even Prof. Howitt gave a better demonstration of physical emphasis than when explaining to the students the wonderful intricacies of schizomycetes, etc. At this juncture most of the "boys" sang old songs, while a few, thoughtful for the others, no doubt, sat silent and smoked.

At this juncture Mr. W. B. Roadhouse, the toastmaster, introduced Dr. Coleman, many years Professor of Geology in Toronto University. He gave a very interesting illustrated lecture on India and the Far East.

He touched chiefly on the commercial importance of the large centres, the peculiar characteristics of the various classes of the people, and the outstanding types of vegetation, both from a scenic and commercial standpoint. The cultivation of tea, rice and millet was given special attention. The live stock was also discussed and several pictures illustrated the merits of their peculiar types of animals. The trotting oxen, which travel at the excessive

rate of 5 miles per hour, the sacred cows, the protected monkeys and how they are trained to pick cocoanuts, the camels and their burdens, and last, but not least, the sagacious elephant and his place in the commerce of that great country.

An interesting feature of the lecture was the description of the crude attempts at irrigation. Water is bucketed out of great wells, oxen being used as the motive power.

As no lecture on the Orient is complete without referring to the religious life of the people, a liberal number of pictures of famous temples were provided, also illustrations and descriptions of feasts, fairs and tiger men.

At the conclusion of this very interesting address, the O. A. C. quartette gave a couple of selections. This was followed by a humorous lantern lecture, by Geo. Patton, in the role of a Professor in Natural History who had headed an expedition of research in the famous tropical valley in Alaska. The history of the expedition was very humorous and the chief discovery was the whipple tree ant, a very rare species and capable of producing the most marvelous eggs in size, in shape and in color.

Comic skits were put on at various intervals of the programme by Mr. King, of the O. A. C., and Mr. McLaren and George Patton. One of these was a rather pathetic scene, where a great golfer had bitten the dust of defeat before no lesser a player than T. Stewart Cooper, of Grey County. No doubt Tommy has had a wonderful training on hazzards on those rolling ranges in his beloved county.

At 10.30 all joined in Auld Lang Syne and gradually the hall was vacated, each man leaving with a heart bubbling over and a mind gladdened

by the rejuvenation of youthful memories and glad also for the fact that the early settlers of this country, though poor, were instilled with this thought, that there shall be education in this land, thus affording the channels which made this meeting possible.

CHANGES IN GRADUATE LIST

G. T. Jackson, '25, who was recently married to "K" Galbraith, of Class '25 at Macdonald Institute, is branch manager of Coulder's Creameries Ltd, at Outlook, Sask.

H. R. Horning, '23, is with the United Farmers' Co-operative Company, in charge of their seed department. His address is Care of United Farmers' Co-op. Company, 109 George St., Toronto.

G. H. Cutler, '09, is Professor of Agronomy in the College of Agriculture, and Assistant Chief in Agronomy in the Agricultural Experiment Station at Purdue University, Lafayette, Ind.

A. J. Graham, '23, is at present at Vineland Station. Graham took a year at College of Education in 1925-6.

W. B. George, '23, is now Dean of Residence and a lecturer at the Agricultural School at Kemptville.

T. H. Binnie, '07, is living at 399 Sunnyside Ave., Toronto. He is engaged in journalistic work.

W. S. Van Every, '22, has left the Government Service as Agricultural Representative in Lincoln County, and is now engaged in the insurance business. His address is R. R. No. 2, Welland, Ont.

M. H. Winter, '14, has been transferred from Renfrew to Lindsay as Agricultural Representative.

A. H. Martin, '24, has been appointed Agricultural Representative in Ren-

frew County, with headquarters at Renfrew.

J. I. Way, '20, is now Creamery Manager for Armour's Creameries at Springfield, Miss.

D. R. A. Wharton, '24, is with the Bacteriology Division at the Central Experimental Farm at Ottawa.

G. R. Lane, '24, is a Forest Assistant with the Ontario Forestry Branch. He is living in Toronto at 59 Grosvenor St.

J. A. (Scotty) MacMillan, '24, is with the Manufacturer's Life Assurance Co. in Toronto. His address is 93 Isabella St., Toronto.

E. F. Neff, '15, has been transferred from Athens to St. Catharines as Agricultural Representative.

A. A. Knight, '09, has been transferred from Lindsay to Athens as Agricultural Representative.

C. L. Carr, '23, is a Chemist with the Arctic Ice Cream Co., Detroit, Mich.

H. L. Laing, '22, is Assistant Manager of the Beatrice Creamery Co., Howard and Vermont Sts., Detroit.

J. C. Purdy, '22, is with the Lewis E. Meyers Co. (School Furniture), in Montreal.

H. S. Steckle, '16, is farming at Cottam, Ont.

G. A. Ficht, '23, is taking graduate work at the Entomology Dept., Iowa State College, Ames, Iowa.

Thomas H. Blow, '23, County Agricultural Agent in Washington County, Vermont, has won a trip to the 19th annual meeting of the American Society of Agronomy, held in Washington, D.C., November 18th and 19th.

This trip is provided each year by the National Fertilizer Association and the award is based on the extension programme in Soils and Crops carried on by the County Agent. Only eight

trips each year are awarded to the agents of the entire United States.

Tom's address is Montpelier, Vermont.

**F. W. WALSH NOW PROFESSOR OF
ANIMAL HUSBANDRY AT
N. S. A. C.**

F. Waldo Walsh, of Truro, N. S., has been appointed Professor of Animal Husbandry and Director of Live Stock Marketing at the Nova Scotia Agricultural College to succeed Prof. J. M. Trueman, who has removed to Halifax, to direct work of the Agricultural Representatives and General Agricultural Extension work in the Province of Nova Scotia.

Prof. Walsh was born in Moncton, N. B., on November 8th, 1897, and is the son of Mr. and Mrs. F. H. Walsh. Prof. Walsh's father is a prominent farmer at Coverdale, Albert Co., N.B., where he conducts mixed farming operations with dairying as the main issue.

Prof. Walsh entered the Nova Scotia Agricultural College as freshman in the fall of 1915, and graduated from that institution in 1917, after which he started work with the New Brunswick Department of Agriculture, judging in the Field Crops Competitions, and later engaged in work for the Live Stock Department. He enlisted in the

Canadian Air Force in March, 1918, and was enroute overseas when the armistice was signed. He was assistant and acting Live Stock Superintendent in New Brunswick from September, 1919, to September, 1920, when he entered the third year in the Ontario Agricultural College, Guelph, Ont., from which institution he graduated in 1922, when he became District Sheep and Swine Promoter for Nova Scotia, and since that time has been instrumental in organizing many Pig Clubs and Live Stock Shipping Associations, of which there are at the present time twenty-one of each. In 1922, one carload of hogs and two of lambs were shipped co-operatively in Nova Scotia. This year up to the present time, 70 carloads of hogs and 80 carloads of sheep have gone forward. This speaks well for Mr. Walsh and the men associated with him in his work.

Prof. Walsh is a young man's man. He is full of zeal and energy for his work, an indefatigable worker. Despite the fact that he is following Prof. Trueman, one of the strong men of the College staff, we believe if application to duty counts for anything Prof. Walsh will give a favorable account of himself and will be a general favorite with the students as he is with all whom he associates. "The Maritime Farmer."



The College Royal will be held on January 18th.



A PHILOSOPHY OF LIFE

By Speedy Bill

Those who seek a life so happy,
That it seems but sunny hours,
Can obtain the same by only
Knowing things are yours, not ours.

Giving is the source of pleasure,
Causing eyes to burn with love,
Each and every little treasure
That comes down from up above.

When you see the eyes expressive,
Telling all their happy thought
Tears that shining are suggestive
Of a love that can't be bought.

Then you understand the secret
Of a happiness divine,
And the truth of life revealeth
That sacrifice is sure sublime.

Life is but an empty pastime
When you only think of self,
Void of all the joys of springtime,
Outcast in this world of wealth.

Personal Interference

An old farmer was driving a mare
that interfered very badly. A passing
friend, observing the mare's antics,
cried out:

"Say, Si, that mare of yours inter-
feres pretty bad, don't she?"

Si paused, spat voluminously, and
shrilled: "Yeh, she interferes, all right;
but she don't interfere with nobody
but herself!"

THE TRAFFIC COP

By Speedy Bill

Just a story of the highways,
Thought out by a traffic cop,
As he lay in bed, yes sideways,
Just because HE could not stop.

Two cars speeding on the Highway,
Followed by the traffic cop,
Sixty miles an hour they drove, yea
Round a bend THEY would not stop.

On they went towards the city,
Not followed by the traffic cop,
And here's the reason of my story,
The road did bend, the cop did not.

If those speeding fiends of hades,
Would just think for but awhile,
Instead of gloomy faces court days,
The cop would greet them with a
smile.

For those fiends who own the highways,
Imprisonment their crime to pay,
Is the only chance to keep them,
In the straight and narrow way.

Rather Unneighborly

"Going to town?" inquired a west-
ern farmer.

"Yes," said the neighbor.

"Will you inquire for my mail?"

"No."

"Rather unneighborly of you, I must
say," commented a friend.

"Can't help that," was the reply.

"The last time I asked for his mail
I had to lug a grindstone out to his
place."

SHREWD judges of quality that they are, college girls and college men throughout the length and breadth of the Dominion are enthusiastically telling each other about the "Purple and Gold" Toilet Requisites perfected in the laboratories of Parke, Davis & Co.

Ask your druggist for them



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Shaving Cream
Tar Shampoo
Cold Cream
Vanishing Cream
Almond Cream
Skin Protection
Cream

PARKE, DAVIS & COMPANY
WALKERVILLE, ONTARIO .. MONTREAL, QUEBEC

ARE COLLEGE MEN WANTED?

(Continued from page 200)

failure to use the term will not defeat any secret hopes; and certainly in no other one way does he so prejudice his case as when he talks, and often with the utmost sang-froid, of an executive position for himself, talks of it as a certainty, and to business superiors who may not yet have determined whether they wish to retain him even in a minor capacity.

Not a little, in fact, of the irritation Big Business feels with the college man has to do with his manners. Executives easily excuse crudeness in a man who has come up from the ranks, but they are still very generally filled with the notion that a college education connotes gentility. Overlooking the truth that men

from every walk of life now go to college, they are astonished, at times infuriated, when a graduate of Harvard, Dartmouth, the Wharton School of Finance, or the University of Chicago, bursts open the office door, without having made a previous appointment, and interrupts what may be a serious consultation. The vast majority of executives of high rank of the present day did not go to college; they tend in one and the same breath to depreciate a college education and to exaggerate the benefits it confers. They often appear unaware that if a young man has not imbibed the elements of good breeding in his own home he will not acquire them at college.

I recall a gifted young man, about a year out of college, to whom had

(Continued on page x)

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Two Pairs of Trousers

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The overcoats built on this season's best lines.

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EVERYBODY
AT THE RIGHT PRICE

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Guelph's Leading and Largest Store

ARE COLLEGE MEN WANTED?

(Continued from page viii)

been given the ever-pressing problem of the conservation of office space. It was intended, of course, that any changes he proposed, should be brought about by diplomatic approach to the executives affected. But the young man was so captivated by the really admirable readjustments he had worked out that he went strutting around the sales department, announcing to the sales correspondents that the sales manager's office was entirely too large and that he proposed to take some of the space away and give it to others. The young man's lordly words reached the sales manager. After a few hearty laughs over the matter, the sales manager's wrath vanished, but it was incalculably more difficult to introduce a college man into his department than it had been before.

While colleges do not attempt to teach manners to the mannerless, more than one educator is all but convinced that the student's future progress will be to a great extent dependent upon them. The dean of one of our oldest and most important schools of business administration told me that after comparing the business career with the college record of a large number of men he was inclined to believe that the two qualities that had more to do with business success than any others were tact and initiative, and of these he would give first place to tact.

The college man himself is prone to resent a suggestion of the sort. He may tell you that the 'glad-hander' is not a model he aspires to follow, blind to the wide range that lies open to his choice between boorishness and babbitttry.

The case recurs to me of a young man whose professors were enthusiastic over the way he had prepared business reports assigned him, gathered business data, and so on. They called him one of their star men. For more than two years after he entered Big Business every effort was made to fit this young man into the right niche. His college expressed much surprise that he was not giving a good account of himself. Finally, when he had accumulated so many black marks that it was impossible to transfer him again it was decided to 'let him out.' It devolved upon me to do so.

'I wish,' he said, with rather touching humility, 'that you would tell me what is the matter with me.'

'Do you think you can stand it?'

'Fire away!'

'Well, then, I may be mistaken, but the trouble is, as I see it, that you're still revolving around yourself. You're not even aware of the existence of other people. They may not always analyze what it is about you that antagonizes them, but it's the fact that when you deal with them you don't know they're there.'

'What am I going to do about it?'

'Sail out on a voyage of discovery. Start from this port—your first dismissal. Discover that there are millions and millions of people in the world besides yourself. The very minute you've made the discovery it'll write itself in your eyes. They'll know.'

III

If Big Business protests mainly against the college man's manners and his impatience to advance, the college man's charges against Big Business are, it must be admitted,

(Continued on page xii)

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New Fancy Patterns
\$22.50 to \$35.00

ROLLIE HEWER
City Hall Square

ARE COLLEGE MEN WANTED?

(Continued from page x)

far more numerous, if not always so substantially founded.

The first jolt the college man receives is when he finds he is no longer in college. During his college career he has considered himself a rather free individual, standing on his own feet. The truth is, he has been tied to strong leading strings. Cut loose from them, he flounders around in this new element, the great chaotic world of business, assailing it for the lack of direction it gives him. Quite unconsciously he has carried over into the business world the habits and expectations of the campus. He thinks of himself as taking a sort of postgraduate course, misses a set curriculum and marks. If there are college men who discern only too plainly the line of their ascent, far more complain, 'What's ahead of me? That's what I can't see!' Not a glimmer has yet reached such a man that his power to see this will be the measure of his progress; that business leaders have largely developed their strength through hewing their own paths, and through just such a dark maze as he himself faces.

However that may be, more than a few farsighted executives believe there is unwarranted waste for Big Business as well as for the college man in this early period of floundering. More and more companies are instituting training courses for their college men. But whatever may be done in this line, conditions of campus and company must remain broadly different; and in the present day, at least, the college man can probably more readily adjust himself to these differences than can the

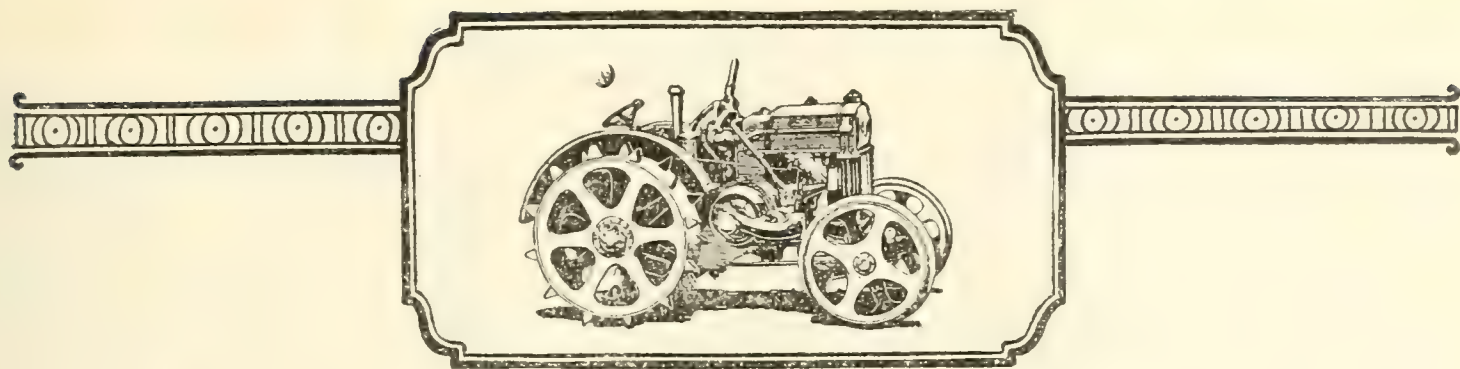
older, more unwieldly party to the alliance.

It is, I imagine, the illusion that he is still at college that leads the college man to ask, during his business novitiate, for many special privileges. He is accustomed to a more flexible institution. Moreover, the one he has left was created especially to care for his needs. The one he has entered was built without regard to them. Being of the age when his friends are marrying and being given in marriage, he often, for example, asks for a few days off to run out to Detroit, or to some other city far or near, to act as groomsman. To the Big Business executive, weddings, unless in his own family, have ceased to have much importance. The young man's innocent request assumes to him, especially if made in the busy season, almost monstrous proportions. Only the college man, he declares, expects such privileges. And the college man, for his part, thinks it 'entirely too trivial a matter to kick up a row about.' Not yet thoroughly acclimatized, he has not learned that the trivial may loom as large in the daily inner life of a great world-flung organization as in the most insignificant domestic ménage.

I know it to be a fact that one unusually capable young college graduate seriously, if not indeed irreparably, damaged his future when, on being offered a post in a distant city, one that marked definite advancement and to which he was expected to proceed at once, he asked whether he might not delay two or three weeks in order to act as attendant at a local wedding.

On the college man's side, in this

(Continued on page xiv)



The Cost That Pays



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IT IS evident that a man who pays 15 cents a bushel to produce a crop makes 60 cents more than a man whose cost of production is 75 cents. Yet variations greater than this are common. In one State, and in the same year, the range in cost per bushel of a certain crop ran from 71 cents to over \$13.00. Also, a difference of \$1.18 per cwt. in the cost of producing milk on neighboring farms is noted.

These figures set farmers to thinking. There is a cost that cannot be exceeded if a profit is to be made. What that cost is, and how near he comes to it, are matters of vital interest to every farmer.

Any analysis will show that a large percentage of farm production costs are due to the cost of power and labor. The best farming practice today is to reduce these costs by the use of highly efficient Case machines—a method that is helping to bring about the reorganization of Agriculture.

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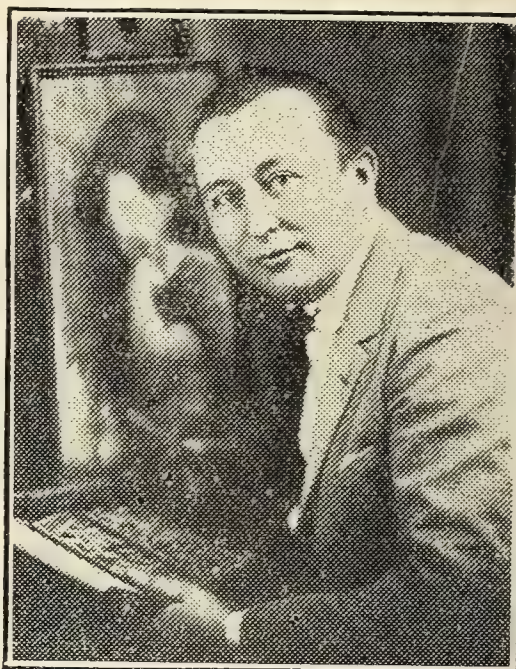
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Artistic Photographers

TO ALL COLLEGE STUDENTS

Hit the Trail that leads to Satisfaction

ARE COLLEGE MEN WANTED?

(Continued from page xii)

difference of outlook, I heard one charge indignantly against an executive with strict notions of business duty, 'Why, that man wouldn't expect me to take time to go to my mother's funeral!'

To-morrow Big Business will belong to the college man. It remains to be seen what he will make of it. To-day it is largely governed by the old type of executive, and perhaps the best thing the college man can do with certain of its conditions is to keep them well in mind till the time comes when he may correct them, if he still considers these conditions unnecessary and obnoxious.

Not the least of the shocks from which the college man must recover is his discovery that business, even

Big Business, is unbusinesslike. There was nothing in lecture or textbook to suggest this—no hint from professors. He has been led to believe that great business organizations proceed almost invariably by well-thought-out policies, by virtually error-proof methods, from triumph, instead of, as in fact, muddling along with one flash of insight and then another to carry them through their welter of waste and costly, if well-covered-up, mistakes. For four impressionable years the young collegian has heard Big Business exalted, almost apotheosized. He joins himself to it in a flame of enthusiasm. No matter what wonders it reveals to his more mature vision, the wounds of his first disenchantment are slow to heal.

(Continued on page xvi)

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ARE COLLEGE MEN WANTED?

(Continued from page xiv)

In many directions he is all at once let down. In nine cases out of ten he finds his work too easy. It is the fashion of the day to advise the 'manufacturer with idiot son to send him to Harvard, where he will have no difficulty in making the grade.' But the fact remains that Harvard and all other universities of the first rank have courses sufficiently stiff to exercise the best brains they are likely to be asked to direct. A fair proportion of the 'best brains' are passing each year from college into Big Business, and with a starting business schedule so light in comparison with the work previously expected of him that the college man quickly becomes restive.

Of his illusions, the very first,

however, to be shattered is in regard to the loyalty he has assumed existed and to which he has so often heard glowing reference. In a huge modern business enterprise, men are attached or disaffected according as they consider themselves to have been well or unfairly treated by the nebulous aggregation that goes by the name of 'the company.' And a large proportion of men, even in the most competently administered corporations, consider themselves to have met something less than their due.

The college man arrives, slightly nervous, but in high spirits, to start his first day. He is turned over to Mr. X, a minor executive, ten or fifteen years with the company and in a fairly responsible position. Mr.

(Continued on page xviii)

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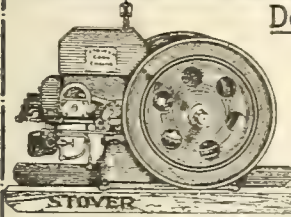
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“A College Graduate”

ARE COLLEGE MEN WANTED?

(Continued from page xvi)

X turns him over to subordinates who are to familiarize him with the work of the department. Before closing time the college man has heard half a dozen times what is considered more important than anything else that the newcomer should find out; ‘Believe me, there’s no chance for a man in this company!’ By the end of his second day he has learned that Mr. X himself has little faith in the company’s opportunities.

If filled too full of ‘disloyal’ talk, he becomes discouraged, severs his connection after a few months, and enters another huge and famous organization where he finds, to his surprise, exactly the same thing. In the course of several years, if he continues to change from Big Business to Big Business, he has ceased

to be affected by talk of the sort, and has begun to realize that men who fail to rise rapidly must blame something, and can most plausibly blame ‘the company.’ He has begun to realize too that the number of men of first-rate ability whom Big Business fails to recognize is negligible. He sees, on looking back, that the men who sneered at ‘the company’ on his first day were men who had gone as far as their own limitations permitted. These discoveries, however, the college man makes after he has been somewhat seasoned, instead of during his first year, when they would have been of most value.

One way to lessen early shocks with their concomitant disasters, is for the college man to enter Big Business forewarned. It is perhaps

(Continued on page xx)

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ARE COLLEGE MEN WANTED?

(Continued from page xviii)

too much to ask of Big Business that it should tear away its own veils. But why not more accurate information from those who point the way to the business field? And it would help, of course, if Big Business itself could furnish more ranking executives willing to give the college man practical aid while he is passing through this stage. I used sometimes to ask a certain executive, at once rarely mellow and of most distinguished attainments, if he would not talk to this or that young college or technical man, utterly disheartened in regard to his future. And to observe the bearing of the college man after the interview was to know that many anxious questions had been satisfactorily answered. A Big Brothers Association as a part of Big Business would, I fancy, pay dividends.

For one thing, it might make the college man understand why a dull ear is so often turned to his cherished proposals; why they are tucked away, after being perfunctorily glanced at, to gather dust in cubby-holes already bulging with plans, graphs, sales analyses, and what not, prepared by other bright young college men. Every year young men enter Big Business genuinely competent to show it where it may save or make thousands upon thousands of dollars. To be able to show this is comparatively easy for the college man of unusual intelligence plus superior training. But to secure and hold the attention of an executive long enough to convince him of the value of a proposal, and convince him to the point where he is

(Continued on page xxii)

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ARE COLLEGE MEN WANTED?

(Continued from page xx)

ready to act on it, is a vastly different matter. No subject in his curriculum, no laboratory, has given him the clue. No Emily Post has arisen to write for him a Business Bluebook. If the college man charges the failure of his suggestions to get over partly to his own maladroitness, he includes it also in a general vague feeling of resentment against the other party to the alliance.

Has the college in any degree been derelict? I am aware that colleges do not exist for the sole or even

the primary purpose of fitting men to make money; but in view of the fact that an ever-increasing proportion of college men turn to business, could the college, along with its courses in cost accounting, the psychology of advertising, economic geography, statistics, and merchandising, have placed more emphasis on a human and personal art vitally important to the collegian's future?

Solely chargeable, at any rate, to the college man's youth is his tendency to regard any given Big Business as more or less a finished pro-

(Continued on page xxiv)

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ARE COLLEGE MEN WANTED?

duct. Deceived by its mass and momentum, in spite of the fact that, unlike Kipling's Mulvaney, the college man is not unaware of his strength, he can hardly conceive himself making a dent on its stratified surface. He studies the organization chart, if it be not too carefully guarded. He pictures his own progress as conditioned by the death or removal to the superannuated list of a long line of superiors on the same branch to which he adheres, as yet a mere twig. What he does not see are the changes that will be wrought in this chart, the branches to be grafted where branches never grew before. Even less does he vision those potentialities within himself that may alter the chart's whole aspect. No superhuman task. After all, Big Business is not the growth of ages. It is barely emerging from its own first year.

The most serious indictment the college man brings against Big Business in its present stage of development, that the men who have shaped Big Business have themselves been shaped into forms he wishes to escape, is one to which any facile reply is more certain to bring silence than conviction. During his first year or so in business, the college man is still keenly sensitive to human values, not easily taken in by mere outward importance. Furthermore, however, platitudinous the suggestion that reverence for their elders merely on the score of their age is entirely lacking in the young people of to-day, it has definite bearing. Neither dad nor the president of a billion-dollar combine escapes the clear-eyed scrutiny of

(Continued on page xxvi)

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ARE COLLEGE MEN WANTED?

the young college man of this era. Whatever may be true twenty years later, during his first year in business he examines its leaders, their views and their ways, with detachment and frequency with distaste. 'If this —' he says. 'Well, I wonder —'

But has the college man sufficiently considered that, unlike most of his elders, he himself has been taken up into the high places, whence he could look off and see something of the pattern? Has he discerned that the authors of 'Business is Business' missed his own early unclouded chance to perceive that Business is Life? It would be a pity if the college man and Big Business, with its rich experience, should grow in distrust of each other.

'But there is no adventure in Big Business' the college man still insists. 'There is too great certainty.'

On the contrary, there is no certainty at all, but a heroic hazard for the man who is determined that, if it shapes, it shall not misshape him. And if he decides to take a hand in reshaping Big Business itself, as it exists to-day,—the product of the older generation, who laid its foundations and reared its walls,—he will find, I make bold to predict, play for all the inventiveness, the courage, the endurance, that has gone at any time into human achievement. — Atlantic Monthly.

MAKING A RECORD

(Continued from page 201)

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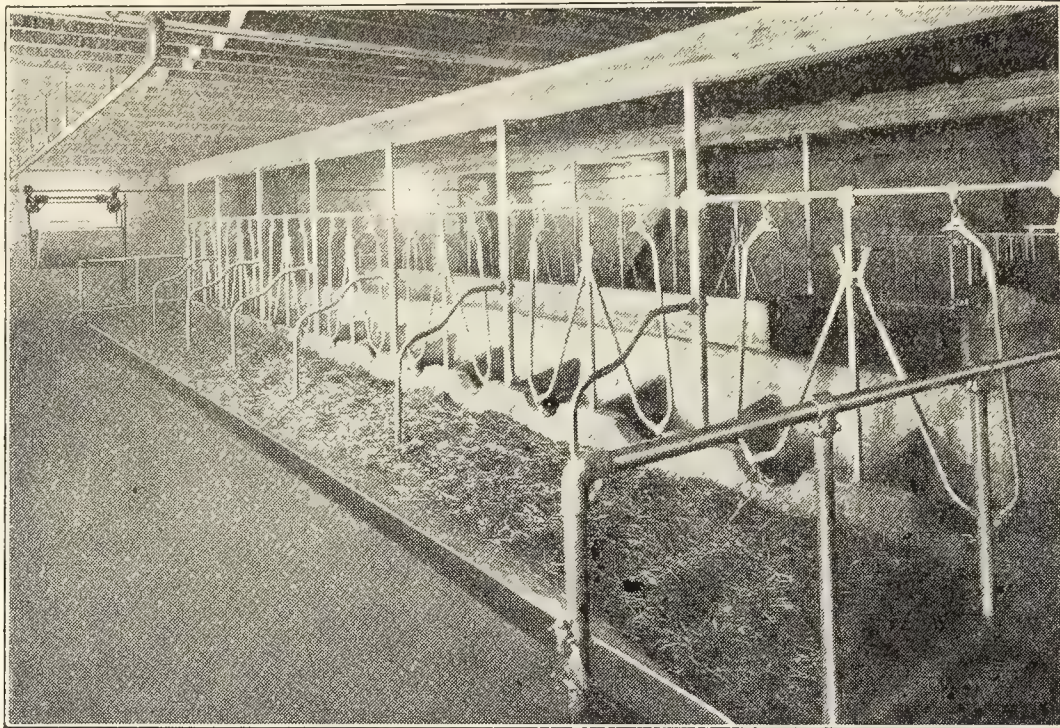
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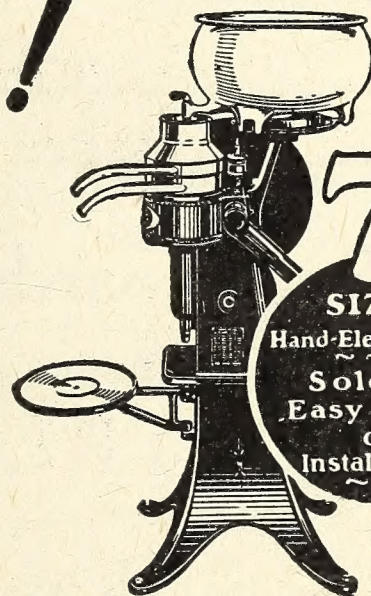
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Toronto, December, 1921.



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First, he said: "One great problem before us is the need of reducing costs. Success comes to the man who makes anything as good as anybody else, but also makes it cheaper!"

Here he has hit on the farmer's biggest job. To-day the old methods, old-fashioned equipment, and slow muscle power that turned out a good day's work in 1913 are eating deep into farm economy. The profit is bound to be slim for the farmer who does not cut costs to the bone. He must adopt the faster, more productive methods that add to income, and so raise his family's standard of living.

The further advice of this man is: "I don't believe in Ben Franklin's maxim about saving pennies. If you watch the big things the pennies will take care of themselves."

This is a plea for the most practical kind of economy—a plea for **MAKING** money rather than **SAVING** money. It comes from a man who began at the bottom of the ladder and built up a great business. If he had hung onto pennies, afraid to invest in money-making equipment, he never would have been heard of. In industry the old equipment is scrapped, no matter how costly, as soon as better, cost-reducing equipment comes on the market. In farming it **MUST** be the same.

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